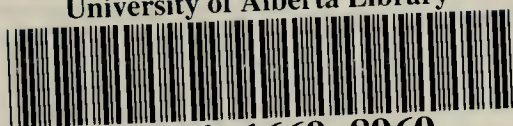


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December, 1974



Blue Jay

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FOR SASKATCHEWAN AND ADJACENT REGIONS

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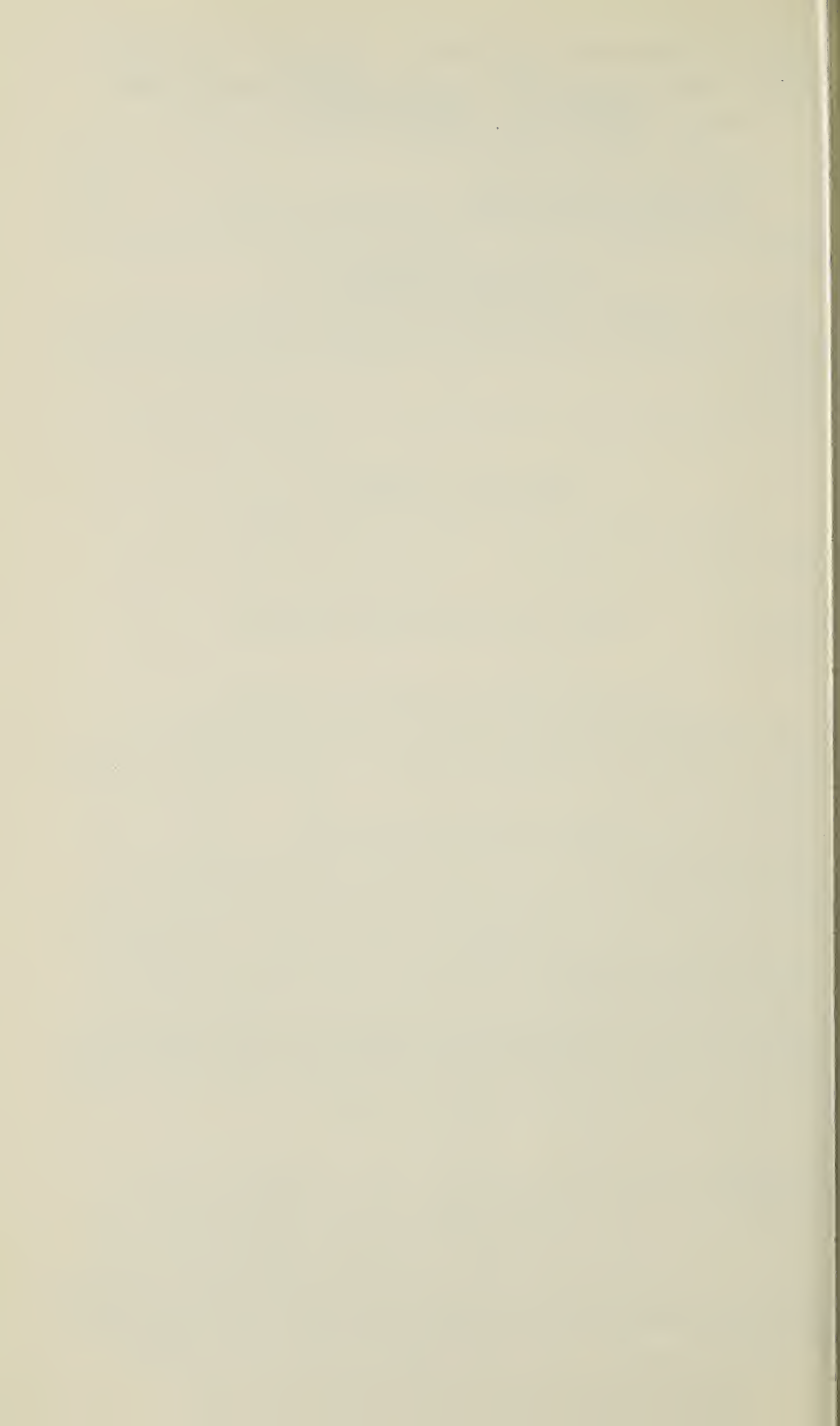
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Vol. 32, No. 4

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TABLE OF CONTENTS

BOHEMIAN WAXWINGS. <i>Lorne Scott</i>	Cover
CEDAR WAXWINGS — BACKYARD JOTTINGS. <i>Arlean McPherson</i>	195
ABOLISHED AND FORGOTTEN NATIONAL GRASSLAND PARKS. <i>C. Stuart Houston</i>	204
Plants	
PLANT RECORDS FOR SASKATCHEWAN — 1973 VERSION — STARRING PORCUPINE MOUNTAIN. <i>John H. Hudson</i>	210
Insects	
'HOPPER HARVESTING. <i>Elmer Laird</i>	215
Birds	
POST-FLEDGING MOVEMENTS OF JUVENILE BALD EAGLES. <i>Peter Gerrard, Jonathon M. Gerrard, Douglas W. A. Whitfield and William J. Maher</i>	218
GOLDEN EAGLES ATTACK WHITE-FRONTED GEESE. <i>Ernie Kuyt</i>	227
A PROBABLE LITTLE GULL RECORD FOR SOUTHERN MANITOBA. <i>Martin K. McNicholl</i>	229
MORE GREAT CRESTED FLYCATCHERS AND SHORT-BILLED MARSH WRENS IN ALBERTA. <i>Wayne C. Weber</i>	230
FIVE VIREOS AT FORT QU'APPELLE, 1972 and 1973. <i>E. Manley Callin</i>	234
THE AUTHENTIC SPARROW HOUSE. <i>Virginia Bartkow</i>	235
FOURTEENTH ANNUAL NESTBOX REPORT OF THE BRANDON JUNIOR BIRDERS. <i>John Lane and Tony Burton</i>	238
INDIAN HEAD BLUEBIRD TRAIL REPORT — 1974. <i>Lorne Scott</i>	239
SASKATOON BLUEBIRD TRAIL — 1974. <i>Donald S. Houston</i>	240
WESTERN TANAGER SIGHTING IN MANITOBA. <i>Calvin Cuthbert</i>	241
LANGHAM, SASKATCHEWAN, BLUEBIRD PROJECT — 1974. <i>Jack Kargut</i>	241

HELP A U.S. REFUGE FOR SANDHILL CRANES	24
PRAIRIE NEST RECORD SCHEME	24
SASKATCHEWAN CHRISTMAS BIRD COUNT — 1974	24
AGGRESSIVE MUTE SWAN KILLS GOSLING. <i>Gary W. Seib</i>	24
Mammals	
SIXTEEN ALBERTA BAT RECORDS, 1971-1974. <i>Edgar T. Jones</i>	24
THE INSTRUCTIVE STOMACHACHE	24
MEMBERSHIP SUBSCRIPTION RENEWAL. <i>George Dodd</i>	24
30 YEARS AGO	24
TO THE ARCTIC BY CANOE 1819-1821	24
1974 CLIFF SHAW AWARD	24
1974 CONSERVATION AWARD	24
Letters	
REGINA EARTHQUAKE. <i>C. H. Shulver</i>	24
ODD ACRES. <i>Theresa M. Heuchert</i>	24
BRANT AT CARROT RIVER. <i>F. B. Armstrong</i>	25
THE PRAIRIE FALCON AND I IN 1973. <i>Flossie Bogden</i>	25
Nature Library	
WINTER SEARCH PARTY. <i>Pat O'Neil</i>	25
ANIMALS AND PLANTS IN WINTER. <i>Diane Sarich</i>	25
LOOKING BACK. <i>Bernie Gollop</i>	25



First perch! A young Cedar Waxwing.

Arlean McPherson

CEDAR WAXWINGS: BACKYARD JOTTINGS

by ARLEAN McPHERSON*

8

The excitement of having a pair of Cedar Waxwings nest this past summer in our backyard and of watching the day by day miracle of the young birds hatching and developing, prompted me to keep brief notes. When Dr. Bernie Gollop suggested publishing these observations my firm and immediate response was to decline, as the life history of Cedar Waxwings has already been well documented and as I have neither training nor experience as a bird-watcher. However, I reconsidered, and the following jottings are submitted with the hope that they may convey something of the wonder and the joy an amateur experienced in magic moments of "watching".

June 29, 1974: A pair of elegantly svelte birds perched in the yellow sunshine this morning on the power line which crosses above our garden. As I grubbed about pulling weeds below, their unusual throaty rasp caught my attention and, when I looked up, their playful and decorous ways held it. Side by side, hopping first to the right, then to the left, courteously passing a shining red berry back and forth, fluttering wings, rubbing bills and heads together, the two were evidently courting. They are beautiful birds with stiff crests on their heads and dark brown bands across the eyes; subtly greyish-brown in color with white underparts fading into a lovely clear yellow under the wings; and a bright paint-like flash of yellow across the tail. Particularly impressive was their impeccable elegance, their sleekness of plumage. A quick check in Godfrey's *Birds of Canada*³ identified them as Cedar Waxwings, similar in appearance to their larger, more aggressive relative, the Bohemian

Waxwing, which often flocks in to attack the dried fruit on our crabapple during the winter.

July 6: While mowing the lawn this evening, I accidentally flushed the female and discovered her nest in the large spruce tree by the sidewalk at the corner of the garage. It is almost at eye-level, between 5 and 6 feet from the ground, fastened to a solid, flat branch. It is sheltered by a second large, spreading branch growing parallel to the first about 6 inches above and is discretely hidden among smaller branches and needles. Constructed of twigs, string and bits of paper, from the exterior it appears ragged and flat. The interior, however, is lined with tightly-woven fine grasses and bits of other soft materials and is surprisingly deep, being shaped something like an old-fashioned bell-shaped tea-cup. At the bottom are three eggs — small, delicate turquoise in color, freckled with black spots.

Within moments the female returned to the nest to incubate the eggs despite the disturbance of lawnmower and gardener. Actually, we should have suspected that the waxwings were

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Newly hatched Cedar Waxwings.

building close at hand, for they have been much in evidence about the garden this past week. Favorite perches are on the power line crossing the yard and on the higher power line in the lane. A second pair often joins them.

According to Loren S. Putnam, nest-building takes from 3 to 9 days.¹ Male and female share the work, and together make over 2,500 materials-carrying trips while constructing a nest. Something of the industry and energy involved is indicated when he says, "To accomplish this in 5 days working 10 hours per day, each bird would be required to make 1 trip every 2.35 minutes." Putnam notes that from two to five eggs are usually laid, beginning almost as soon as the nest is completed. One egg is apparently laid early each day, usually between 5 and 8 a.m., and these are incubated for 12 or 13 days after the last egg is laid.

July 11: Such gentle, beautiful birds! The female is amazingly quiet, suffering us to approach quite near and posing prettily for pictures. The evening a strong wind rocks the nest—the branch on which she has built swings back and forth, sheltered by the parallel branch overhead.

A closer look discloses more details as to her plumage. She has a silky lustre to her smooth brownish coat, a neat dark brown band with fine, traced white liner (like eye-makeup) across her eyes; delicate yellow under her wings; grey feathering on her wing with wax-like drops of red at the tip of the secondary feathers. These red droplets form a neat little row across the middle of her folded wings and from this, the name "waxwing" is apparently derived.

The male resembles the female — little larger, more wary, more ex-



Adult feeding 3-4-day old waxwings.

citable if one approaches the nest when he is there — but so similar that it is difficult to tell the two apart at a distance or in flight.

Arthur A. Allen refers to the “perfect tailoring” of the waxwing, and to its characteristic poised dignity which, as he puts it, “bespeaks good breeding.”¹ The description seems apt as never, despite provocation, have our backyard pair appeared with mussed or disarranged feathers, nor rushed and noisy. Their sleek neatness is notable, as is their quiet gentleness and apparent self-discipline.

The two birds exchange nest-sitting duties, although the one assumed to be the female is there for much the greater part of the time. Last Saturday the eggs were a clear, clean color. Now the black from the freckles seems to be tainting the turquoise, giving it a smoky look, especially at the more rounded end of each egg.

Ordinarily, while one bird tends the eggs, the other scavenges for food or keeps watch from the power line or a nearby perch in the spruce. They signal back and forth — a distinctive throaty, rattle-like sound or a high, more prolonged cry. Only infrequently have I seen them come to the nest together. On one occasion before they had become used to me, the female flew away, leaving the eggs several times for brief periods as I moved about. Finally she returned to sit on the eggs. Her mate accompanied her, perching on the rim of the nest protectively shielding her with his body.

July 12: This morning when I went out to go to work, the strong gusting wind continued to pound the trees in the back garden, shaking the branches and whipping the leaves.

No soft little bird huddled on the nest but the eggs were still there. Then

a throaty hiss-like rattle, a slight flutter, and I saw them! The pair was perched on a far spruce branch, sheltered from the wind, near the ground. With wing fluttering, bill rubbing, head nudging they passed a red berry back and forth.

In a delightful passage written in 1927, Harriet McCoy describes her reaction to a similar exchange:

As we came up to some sumac and other shrubs, we saw a slight movement, as of birds, near the ground. Looking closer, we were delighted to see two Cedar Waxwings perched together on a branch in a little space clear of foliage. We saw after a moment, that they seemed to be engaged in a dance or game, and we watched, half doubting our eyes. One bird had a tiny flower or very new leaf in its bill. The other, standing perhaps 6 inches away, all at once hopped close, took the leaf, and with one hop came back to its position. There it stood, straight, its position being perhaps a cue to the other bird, who now approached and, to our wonder, received the leaf, gave one hop back and stood erect. There was rhythm and precision about the little exercise which made it appear a conscious performance on the part of the birds and one which they seemed to enjoy greatly. We thought we had never seen anything with such pretty grace and delicacy of movement and color. They repeated it several times and when they flew off at last, we were left with a feeling of having been audience to a scene in a fairy play.²

My reaction paralleled hers. Never have I seen anything "with such pretty grace and delicacy of movement and color" as the ceremonious passing of one red berry back and forth.

July 14: On returning from church, I paused to look over at the nest, saw

that the female was unusually restless and so, when she flew off a short distance, approached to look more closely.

Broken pieces of shell were pushed out of the nest and clung to a branch. Two little birds had just hatched. When I climbed up on the kitchen stool to look in, there they were. Tiny naked creatures with no feathers, not even a scrap of down. With eyes glued tight, the scrawny little bodies wriggled about in a tangle at the bottom of the nest. Yet when they felt the vibration created by my hand brushing the branch, up came long thin necks, mouths wide, gaping for food.

One egg was still intact. I took several pictures while the adult hovered. Within an hour the third hatchling had emerged. Each could have fitted nicely into a teaspoon and their pink translucent skin was so delicate that the throbbing blue veins beneath were clearly visible.

Having looked into the nest, I stepped back to watch. Almost immediately both adult birds returned. The male perched on one side of the nest regurgitated red berries one by one to stuff into the expectant, gaping mouths. Within a short time, the female made several trips together to feed the newly-hatched young.

July 17: For the most part the female has brooded on the nest leaving only occasionally to return with food. The male devotedly fetches berries and sometimes a caterpillar. Now 3 days old, the demanding little birds have grown quickly, although they still lack feathers and their eyes are not open.

Both adult birds feed them. This morning I watched an entertaining bit of play when the male flew in with food. His mate was brooding the nestling and, as he customarily does at such times, he perched on the edge of the



Adult waxwing feeding young about 10 days old.

nest and offered her a berry before proceeding to satisfy the other gaping mouths. Suddenly becoming aware of my nearness, he cocked his head, elongated his body, held the berry in his beak, "froze" into what seems to be a characteristic alarm stance. There he stood, tense and immobile, alert to danger. She huddled in the nest but, looking about and deciding that one fascinated watcher posed no immediate threat, impatiently nudged his breast with her head to remind him that she was waiting. He courteously presented her with the berry, then fed the young.

July 18: The nestlings are growing and changing very quickly. Today their skin is turning black, and has a leathery, reptilian look. There are rows of pimples on their backs which suggest that pin feathers may soon erupt.

July 21: The garden is a delightful oasis of quiet this afternoon. I am sitting in the old lawnchair under a spreading tree — the sun is bright around my circle of shade, the sky a clear, clear blue and the wisps of breeze gently refreshing.

The baby waxwings have grown un-



Two weeks old.

believably during the past 2 days. Two days ago, when they were 5 days old, tiny points of feathers began to break through the black pimply patches of skin and their eyes cracked open. Today the three of them, with black pin feathers all prickly, bulging eyes and long stretching necks, completely fill the nest. They must have tripled in size! The parent birds leave them for much longer intervals. Here comes one now!

It is the male. He is much more nervous about bird-watchers than his mate, although quiet. When he flies in, he perches on the rim of the nest and, as the little ones reach beggingly for food, regurgitates as many as six or eight berries. He carries them in his crop and, in turn, brings up each bright red berry (about the size and colour of a pincherry) to hold it daintily in open beak, then push it down a gaping throat.

July 22: Spent the evening trying to

photograph the waxwings. There was sudden thunderstorm about 6 p.m. with heavy rain and deep purple sky but it cleared quickly. Now a strong wind tosses the big branches of the spruce tree and rocks the nest like a cradle. The young birds have grown quickly. Today they have black pin feathers and a coat of soft, grey, fuzzy down. They doze, cuddled up together in the nest, except to wriggle about occasionally, and to stretch and beg for food when the parents approach.

It is a crowded nest now. At 7:30 the female returned to brood. She tucked the little ones under her wings like a setting hen — but they are so large that she looks most uncomfortable. In the wind a dry, dead twig scraped her so on her little body, threatening at times to dislodge her, so I cut it away with the scissors coming within 2 inches of her head as I snipped. She clung to the nest and watched me, conveying the impression that she trusted my good intentions.

July 24: Today, for the first time, the



Adult feeding 2-week old young.

nestlings truly look like little birds. They have soft, brownish-grey feathers on head and back, tinged with just a little white. They have clearly defined wing feathers and flap their wings in the nest when reaching for food. Still, their bodies are not yet maturely proportioned. Legs are comparatively undeveloped, heads large, and open beaks outline a gaping red vacuum.

One nestling seems considerably larger and more aggressive than the other two. Its head appears always to reach first for food, it has appropriated a choice spot in the nest and displays "fight" when one reaches out to touch the nest. This same bird is the only one of the young seriously trying to preen its feathers as yet.

Since I have begun to write, the parent birds have flown into the nest. One perches on its rim in the "freeze" position of watchfulness. The other is on a branch 2 or 3 feet away, equally immobile. Only a yellow flash of tail catches one's eye. Actually, this defensive reaction provides marvellous camouflage, as their subtle brown-grey feathering blends beautifully with the foliage, especially when sun and shade dapple them like leaves and needles.

They are quiet birds, especially when alarmed or cautious. Their approach to the nest just now was absolutely soundless. Frequently, only the flutter of a leaf hit by a passing wing or the breaking of a ray of sunlight by a quick-moving form alerts

one to their presence.

Already the young have learned the danger "freeze". When an adult gives a particular cry, they become motionless bundles of fluff in the nest and stay immobile for an amazing length of time.

July 27: During the past 2 hours the early morning sun has crept across the yard, bringing light and warmth. The three little birds are excitingly beautiful in a shaft of sunshine, preening themselves, advancing to the edge of the nest and trying their wings. Bright paint splashes of yellow mark their tails, their crests are clearly discernible, their beaks are beginning to look more like those of adult birds. At 2 weeks of age, they are presumably almost ready to leave the nest.

The parent birds have made a series of trips in to feed them since I came out. Usually they fly in together, although one usually perches nearby while the other feeds the nestlings. The second then flies to the nest to continue the feeding when the first leaves. Occasionally, however, they feed them simultaneously.

After every feeding the little birds tip up their bottoms, and the parent birds carefully clean them. This has been routine since they hatched and the nest is impeccably clean. Food this morning is varied with some white berries, similar in size to the usual red ones.

The little ones are very active today, calling loudly at the moment for breakfast. For the first time, I have identified the throaty, raspy-hiss demand-cry of the nestlings.

After this last feeding, the most active of the little birds teetered off the brim of the nest to a branch about 2 feet away where it now perches. A second bird is restless in the nest, moving about as if it intends to follow suit. The venturesome loner is tentatively moving about, flapping its

little wings, attempting to find a secure foothold. The branches of the spruce are sufficiently thick and interlocked there, that they support its body weight even though the bird does not seem to be securely anchored.

One of the adults has just flown in, went directly to the two in the nest and fed them, pointedly ignoring the outsider. With frantic wing flapping, great crying and desperate begging, it teetered back into the nest, where it was in turn fed and now preens itself.

July 28: All three young birds have seemingly been confined to the nest since the first one made its exploratory trip. This morning, though, when I came out, one of them took flight and flew awkwardly across the yard to the ornamental crab where it perched precariously.

There it clings. The parent birds saw its baptismal flight and hovered nearby, circling until it found a twig. Then they flew off, to return together within moments. And what a psychological study to watch them try to lure it back to the nest! One flies directly to the nest to feed the two young birds there. The other stops at the crab tree, gives the loner a single berry, then coaxingly flies slowly in a straight line to the nest, thereby showing it the way home. The little one begs and cries but seems paralyzed by the prospect of flying again. On their next trip with food, the parent birds are accompanied by a second pair of adult waxwings who join them in a repeat maneuver to persuade the stray to return. No luck. Late in the evening, the little bird is still absent.

July 29: The stray is back this morning. All three are in the nest — preening, teetering on its edge, flapping their wings, preparing to fly.

July 31: Today, 18 days after hatching, the young left the nest. The three fledglings flew awkwardly to an ad-



An 18-day old fledgling.

adjacent Manchurian elm, and are cuddled together in a single bundle of fluff high among its branches. Only at feeding time can they be seen, so well do they blend with the leaves.

August 1: The parent birds have continued to feed the young, making endless trips with berries. The fledglings have stayed in the elm, seemingly not ready for take-off. But this morning, just one day short of being 3 weeks old, they took flight with their parents.

August 8: Our waxwing "neighbors" have been nowhere in evidence and I had assumed that they were gone. I was therefore surprised at lunchtime to once again hear the distinctive begging cry of the young demanding to be fed and, when I checked, to see an adult feeding two of the fledglings in the Manchurian elm. A little later, saw the two adults perched side by side on their favourite power line.

August 14: While cleaning the rumpus room this evening, went out to shake the mop, heard a familiar throaty-hiss, and a longer higher-pitched whistle. Five waxwings, presumably our backyard family, were lined up on the power line and had signalled their presence. For the past week, I have missed them about the yard and tonight felt a burst of joy to see them again. Perhaps it is wishful thinking, but I fancied that they had dropped by to show me their grown babies, to share one last "magic" moment and, in their courteous way, to say farewell.

¹ALLEN, A. A. 1939. *The Golden Plover and other birds*. Ithaca, Comstock Publ. Co.

²BENT, A. C. 1950. *Life histories of North American wagtails, shrikes, vireos, and their allies*. Wash. D.C., Smithsonian Inst. U.S. Nat. Mus. Bull. 197.

³GODFREY, W. E. 1966. *The birds of Canada*. Ottawa, Natl. Mus. Canada. Bull. 203. Biol. Series 73.

⁴PUTNAM, L. S. 1949. *The life history of the Cedar Waxwing*. Wilson Bulletin 61: 141-182.

ABOLISHED AND FORGOTTEN NATIONAL GRASSLAND PARKS

by C. STUART HOUSTON¹

My old 3-mile-per-inch topographical map of the Maple Creek area included an area blocked in as Menissawok Park. I had forgotten this until David A. E. Spalding reprinted in the September 1973 *Alberta Naturalist*, under the heading "Where are they now?", a Dominion Order-in-Council dated 31 May, 1922, setting up three Dominion Parks. These were as follows:

Menissawok Park of 17 square miles, a nearly rectangular area beginning just five miles south of Maple Creek, Saskatchewan. Menissawok is a Cree word meaning "many berries".

Nemiskam Park of 8-1/2 square miles, beginning three miles north of the hamlet of Nemiskam, Alberta.

Wawaskesy Park of over 54 square miles, beginning 28 miles north and 4 miles east of Medicine Hat, Alberta, within a local elbow of the South Saskatchewan River. Wawaskesy is a Cree word meaning "red deer".

I knew from a paper by J. Dewey Soper, "Notes on the fauna of the former Nemiskam National Park and vicinity, Alberta" (*Can. Field-Nat.* 63: 167-182, 1949), that "this park was cancelled by legislation adopted during the 1946-47 session of Parliament". But why was Nemiskam Park abolished and when were the other two discontinued? With the Saskatchewan Natural History Society advocating a National Grasslands Park, shouldn't we learn what hap-

pened to the three smaller parks w
once had?

Since both governments are involved in the formation of national parks, I wrote first to W. Schwartz, Controller of Surveys in the Saskatchewan Department of Natural Resources. My questions were not easy to answer. After a month of searching T. F. Wagner, Supervisor of Lands reported that "very little information could be found". He confirmed that Order-in-Council No. 1134 had been published as a Proclamation in the Canada Gazettes of July 1, 8 and 15 of 1922. His staff had made a check of the Canada Gazettes between 1922 and 1934 and could find no reference specifically rescinding the Order-in-Council creating these parks. Mr. Wagner commented: "It is difficult to believe that the land would have been turned over to the Province as long as it had Dominion Park status, unless the transfer automatically rescinded such reserves or if a rescinding O.C. was not published in the Canada Gazette, both of which seem unlikely. Frankly, I really don't know where the information as to when and why this park was eliminated can be found."

Mr. Wagner kindly provided a copy of P.C. 1164-1/2, dated 7 August 1931, by which 7-1/4 of the 17 sections of land in Menissawok Park were transferred to the Province of Saskatchewan, and suggested that the remainder was transferred to the Province under the Resources Transfer Agreement of 20 March, 1930. Since then, the former Menissawok

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Pronghorns near Maple Creek, Saskatchewan.

Gary W. Seib

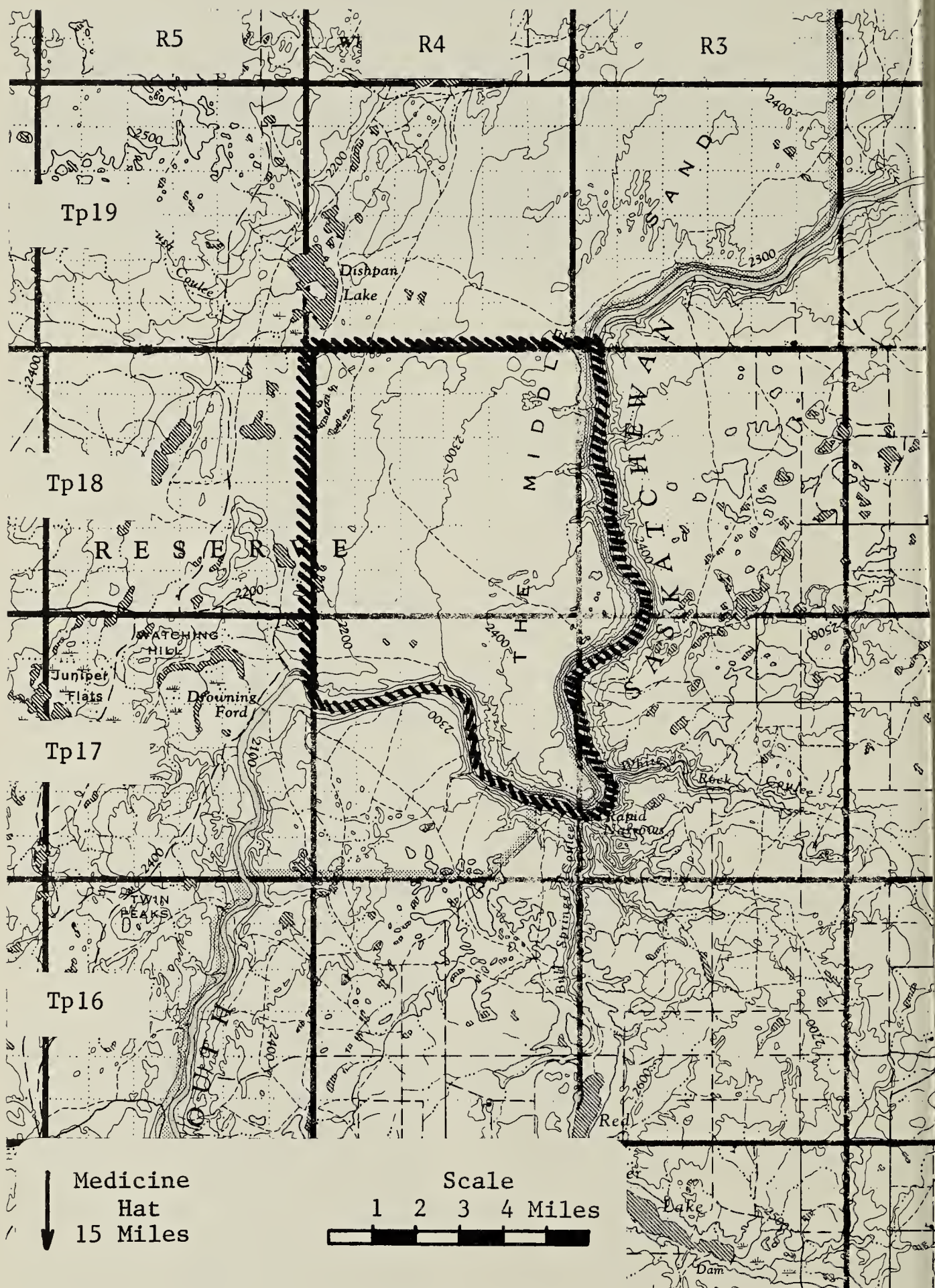
Park has been administered as agricultural land and leased for grazing purposes; at present, nearly all of it is included in one ranch lease.

Mr. Wagner informed me that enquiries concerning all grants of Dominion Lands issued by the Department of the Interior between 1873 and 1930, formerly answered by the federal Department of Indian and Northern Affairs, as successor to the old Department of the Interior, have since 1972 been transferred to the Public Records Section, Historical Branch, Public Archives of Canada. He provided file numbers relating to the Department of the Interior and suggested I contact the Public Archives in Ottawa.

Mrs. Grace Lewis of the Public Archives was then able to find for me a copy of a memo of 5 October, 1945, from W. C. Hales, Fur and Game Inspector, Edmonton, to D. E. Forsland, Superintendent of Game, Ottawa. Hales and Dr. A. L. Rand of the National Museum, Ottawa, had carried out a study of the suitability of Nemiskam Park as an antelope reserve. Hales reported that this park had outlived its usefulness, due to its poor location on the edge of the antelope range, because the fences were in a bad state of repair and because the

park was now being heavily grazed by domestic cattle. Through Mrs. Lewis, I was able to purchase a copy of Dr. Rand's unpublished 105-page report, *Status of Pronghorn Antelope*.

Rand's report gave a detailed resumé of the status of the antelope, which had led to the formation of the three antelope parks. Prior to 1906, antelope were reported to be "common on the plains like bands of sheep". Their numbers plummeted in the severe winter of 1906-07, when farmers lost from one-third to one-half of their cattle. At the same time, on one ranch north of the Cypress Hills in Saskatchewan, all 600 antelope were said to have perished, while in southeastern Alberta, a herd of 500 to 1000 antelope diminished to seven animals. In 1913, extensive travels throughout southwestern Saskatchewan by G. R. Sexsmith, revealed only three groups of antelope, in all totalling not more than 75 animals. In 1914, the Minister of the Interior in Ottawa was told that the antelope was in danger of extinction. In 1916, the Menissawok park area near Maple Creek and the Nemiskam park area were reserved by Order-in-Council on recommendation of the Minister. In 1922, Wawaskesy was added from a part of the "British Block" (now the Suffield Military Reserve) and the

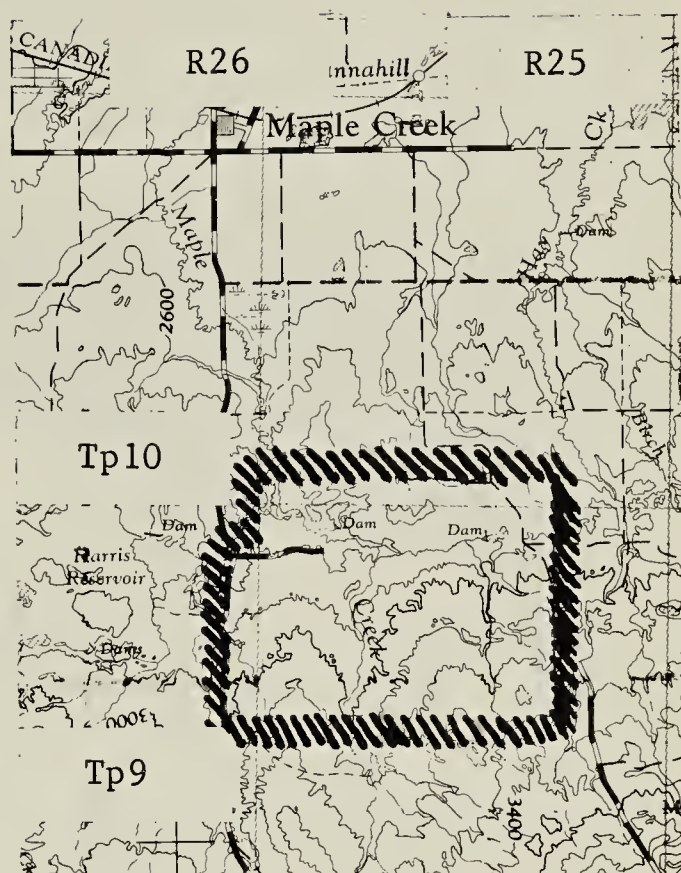


1. Wawaskesy, Alberta

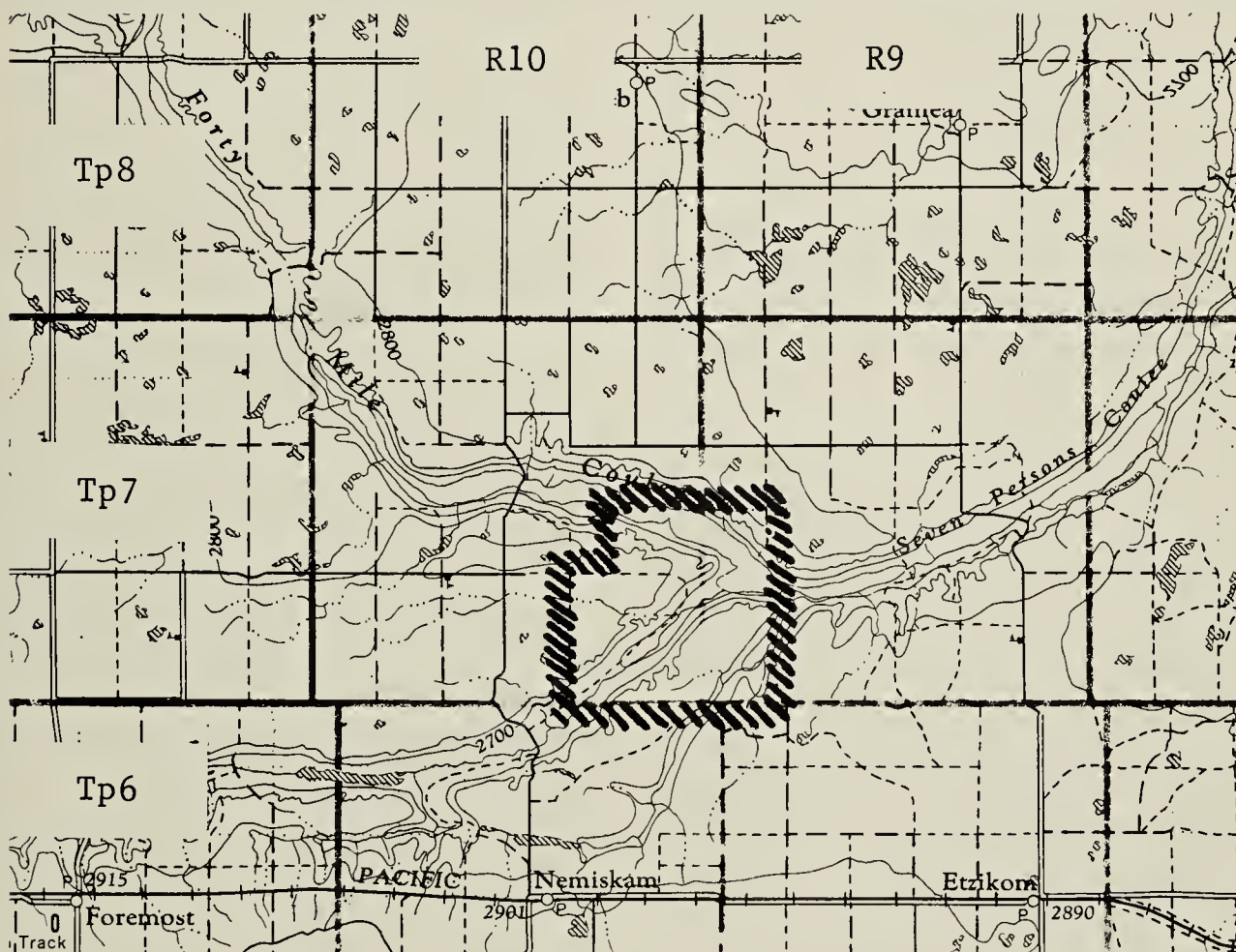
FORMER NATIONAL PARKS



1. Wawaskesy National Park
2. Nemiskam National Park
3. Menissawok National Park



3. Menissawok, Saskatchewan



2. Nemiskam, Alberta



Pronghorns in snow.

Gary W. Seib

three were officially proclaimed as national parks, "with a view to protecting the Prong Horned Antelope and other rare species of wild life" from extinction.

Recovery of the antelope continued to be slow. In 1924, the Canadian population was estimated at 1,400, in 1925 at 1,327 and in 1933, as 2,400 antelope. In spite of a transient setback in the winter of 1935-36, antelope then began to increase rapidly until Anderson in 1938 estimated 15,000 in Alberta alone. Rand's estimate for the two provinces together in 1945 was 30,906 antelope.

I next wrote to Steve Kun, Director of the Planning Branch of Parks Canada. P. A. Bryan of the Property Management Division replied 2-1/2 months later and apologized for the

time required to find all the answers to my questions. Mr. Bryan kindly provided copies of the relevant Acts.

The National Parks Act of 1930 (assented to 30 May, 1930) included most of the parks embodied in the Dominion Forest Reserves and Parks Act of 1927, but specifically excluded three of the former parks. The excluded parks were Fort Howe Park, a 16-acre park within the city of St. John, New Brunswick, and Menissawok Park and Vidal's Point Park in Saskatchewan. Next, the National Parks Amendment Act, 1938 (assented to 24 June, 1938) abolished Wawaskesy National Park, with the general comment "no longer required for park purposes". Finally, the National Parks Amendment Act 1947, (assented to 17 July, 1947) giving the same general reason, abolished both

Nemiskam Park and Buffalo Park in Alberta. Mr. Bryan kindly supplied a copy of the Spring, 1966, issue of the quarterly staff magazine of the Department of Northern Affairs and National Resources, with a most helpful article on "The parks of yesteryear" by W. F. Lothian (*Intercom* 9: 13-17, 1966).

Lothian's article told how the formation of the three parks was a response to predictions such as those of W. T. Hornaday that, because of the difficulty of maintaining the species in captivity, the antelope was doomed to extinction unless it was fully and permanently protected in a wild state in its native range. As the antelope increased in southwestern Saskatchewan, Menissawok Park was released for other purposes in 1930 and in 1938 Wawaskesy Park in Alberta was abolished for similar reasons.

Lothian's article gave details on two other parks of interest to me. Buffalo National Park was established on 170 square miles near Wainwright, Alberta in March, 1908, following purchase by the Canadian government of the main surviving remnant of plains bison anywhere. Between 1907 and 1912, 716 bison, purchased from Michel Pablo, a Montana rancher, were shipped from Ravalli, Montana, to Canadian parks, chiefly Buffalo Park. By 1940, the total increase over the original herd at Buffalo Park was approximately 27,000, with many shipped to establish adequate numbers in other National Parks. The park operation was concluded in 1940-41 and the bison slaughtered, supposedly because of deterioration of the range from overgrazing, with disease and parasites developing in the animals. The area was immediately converted to military training purposes, though the park was not officially abolished until 1947!

The final park of interest, to my complete amazement, was my childhood swimming place at Katepwa, Saskatchewan! Lothian's article mentioned that Vidal's Point was reserved as a public camping resort in 1902 by the Forestry Branch of the Department of the Interior. It was named for J. F. Vidal, who homesteaded the adjoining quarter section, and was formally established as a Dominion Park in October, 1921. During the last year of its existence as a national park in 1929, it attracted 17,400 visitors. Its size of only 17 acres did not measure up to the standards set with the new National Parks Act of 1930, so it was abolished. It is now contained within Katepwa Provincial Park.

This information is offered in the hope that it may also prove of interest to others — and to emphasize the need for public vigilance in these matters. In the 1930's, there wasn't a provincial natural history society nor a National and Provincial Parks Association to comment and few seemed even to notice the abandonment of these parks. It is helpful that an Act of Parliament is necessary before a National Park can be abolished but the above account demonstrates that this is not an iron-clad guarantee. Nevertheless, I wish to commend the Government of Saskatchewan for their recent legislation, for the first time requiring an act of the legislature before a Provincial Park can be abolished. This makes our provincial parks much more secure.

What a pity that we have had three national grasslands parks, even if of modest size, and a good-sized parklands area for bison — and let them go. If we are to maintain and extend both our national and our provincial park systems in future, public interest and support will be of increasing importance.

PLANT RECORDS FOR SASKATCHEWAN — 1973 VERSION — STARRING PORCUPINE MOUNTAIN

by JOHN HUDSON*

I have been sending in communications to the Blue Jay since 1956 about having found plants hitherto unreported in Saskatchewan. Surely, readers may well mutter, an end must come of all this — the fellow is going to run up against the law of diminishing returns sometime. However if one picks an unfamiliar territory of varied topography off the beaten track and visits it, there is a good chance one will find something one hasn't seen before, no matter how long one has been botanizing.

Thus it was that in summer, 1973, I thought I'd have a look at Porcupine Mountain. Access is provided by a forestry road traversing it from north to south parallel to and a few miles west of the Manitoba line, from Armit on Highway No. 3 to Arran on Highway No. 49. From the 1:250,000 N.T.S. map 63C (which does not show this access road) one could see that Porcupine Mountain reaches an altitude of 2,600 ft. above sea level some 14 miles south of Armit (alt. 1,000'). There is a drop of about 1,100 feet in the first 4 miles north from this highest spot, after which the other 500' of altitude is lost more gently over the remaining 10 miles to Armit, which hamlet lies in the Manitoba lowland, the old Lake Agassiz bottom. Indeed, Lake Agassiz beach ridges may be

spotted protruding from the swampy forest some 3-4 miles south of Armit. But going the other way, south, from this highest spot altitude is lost only imperceptibly; one traverses some 35 miles of forested rolling hills before coming out in farmland north of Arran. This road, it should be noted, becomes impassable after rain.

My botanizing was done mostly near the summit, just behind (south of) the steep drop. The high precipitation due to the altitude along with good drainage made Rowan Trees (*Sorbus decora* Sarg.) abundant on the slope of the "mountain." Actually the landform is that of a plateau covered with glacial drift, making up one of the segments of the Manitoba Escarpment.

Three species not reported for Saskatchewan were found here, plus assorted already reported species that I personally had not seen before. I might have done even better had I not been forced to leave hastily and ahead of schedule every time (three trips) on account of rain.

The first of the novelties was *Milium effusum* L., Millet-grass, collected as Hudson No. 2858, July 1, 1973, dominant in old clearing in rich mixed forest, Porcupine Mountain 52°38'N, alt. about 2,600'.

This is a large upstanding grass about the size and build of the common Awnless Brome (*Bromus inermis* Leyss), but with the paniculately borne

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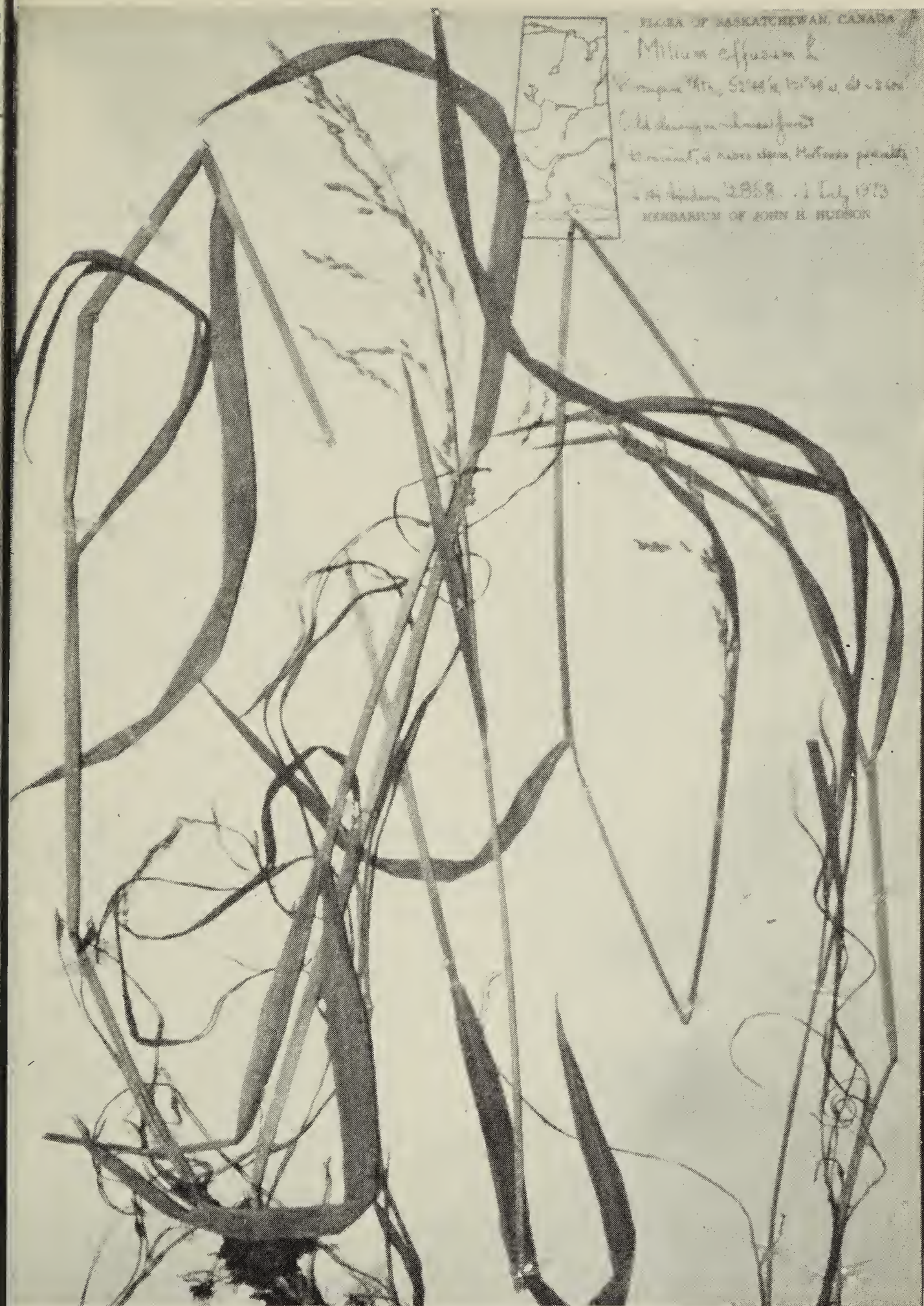


Fig. 1. Mount about 11" X 17" Millet-grass *Miliun effusum*

spikelets one-flowered (Fig. 1). The lemma and palea of the flower are hard, smooth and shiny like those of Proso Millet (*Panicum miliaceum* L.). Although no relation to the millets, the

resemblance impressed Linnaeus enough to name this grass *Miliun*. The grass is reported for Manitoba by Boivin.² Scoggan⁵ discounted old Manitoba reports in spite of the fact





Fig. 4. *Carex laxiflora*

that it had by then been collected by J. S. Rowe (personal communication) on Riding Mountain. It is thus not surprising that it should turn up further northwest along the Manitoba Escarpment.

The find of the summer was *Cystopteris montana* (Lam.) Bernh., Mountain Bladder-Fern, collected as Hudson No. 2866, July 17, 1973, in low wet open spot in black spruce forest, locally abundant with Spinulose Shield Fern (*Dryopteris austriaca* (Jacq.) Woyнар), Porcupine Mountain, 52°38'N, 101°48'W, alt. 2,600'. This fern falls into the same genus as our common Fragile Fern, *Cystopteris fragilis* (L.) Bernh., through its reproductive structures but in gross appearance it has no resemblance. With more or less triangular fronds it looks much the Oak Fern (*Gymnocarpium dryopteris* (L.) Newman), except that the fronds are once more pinnatifid. The photos, Figs. 2 and 3, of herbarium mounts of the two species show the difference. The fern is not known between the Rocky Mountains of Alberta and Thunder Bay, Ontario, according to the distribution map in Hultén.¹ I had, of course, no idea what it was when I collected it, other than that I didn't know it; it had to be keyed out from scratch using Eastern manuals.

Another plus value was *Carex laxiflora* Lam. (?) var. *blanda* (Dewey) Boott, collected as Hudson No. 2871, July 17, 1973, in mossy spruce forest on Porcupine Mountain, 52°38'N, 101°48'W, alt. 2,600'. This is an eastern woodland sedge. The species, *C. laxiflora*, is highly variable; Boivin recognized six varieties of it in Eastern Canada, of which he reported only var. *blanda* as reaching Manitoba.² Scoggan gave Manitoba material the status of a full species, *C. blanda* Dewey, and reported it from Brandon and Whiteshell Forest Reserve.³ The assignment of my material to var.

blanda is done with some doubt and solely on the basis of these published reports; the material fits none of the described varieties perfectly. There is no point in giving a written description of it; it looks like no familiar species. Some idea of its appearance may be obtained from the photograph of the collection (Fig. 4).

Also at Porcupine Mountain the rare northern sedges *Carex loliacea* L., Hudson No. 2870, and *C. pauciflora* Lightf., Hudson No. 2856, were collected on July 17 and July 1, respectively. The former has been reported from Lac la Ronge and Athabaska Lake by Breitung, the latter from Athabaska Lake by Argus.^{3 1}

Duplicates of these collections have been sent to the herbaria of the University of Saskatchewan, Saskatoon (Sask.) and of the Dept. of Agriculture, Ottawa (DAO).

The records reported here represent a mixture of northern and of eastern species. The eastern species seem to be extensions from their general ranges along the Manitoba escarpment; the northern ones are undoubtedly a consequence of the altitude of the hills, which are colder and moister than the country at their base. It must be understood, however, that in overall aspect Porcupine Mountain looks just like any other tract of Boreal Forest; only the rowans when in flower give any hint that the plant geography may hold something of interest.

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'HOPPER HARVESTING

by ELMER LAIRD*

(Condensed from *PROBE*, September, 1974)

On July 16, 1974 I phoned *PROBE* and told them that I was sending a telegram to The Hon. Sam Uskiw, Minister of Agriculture, Government of Manitoba, Winnipeg, Manitoba: I HAVE A GOOD CROP OF LARGE HEALTHY ORGANICALLY GROWN GRASSHOPPERS IN THREE HUNDRED ACRES OF WHEAT STOP PLEASE INFORM ME RE CUSTOM HARVESTERS OR HARVESTING EQUIPMENT AND MARKETING OPPORTUNITIES. With copies to The Hon. Eugene Whelan, Federal Minister of Agriculture, Ottawa; Japanese Embassy, Ottawa; the Hon. Jack Messer, Saskatchewan Minister of Agriculture, Regina, and to the press.

The reason for the wire was there were numerous press reports in the fall of 1973 about the development of equipment in Manitoba to harvest grasshoppers for the Japanese market, should the predicted infestation materialize in 1974. This is what happened.

I thought if the equipment had been developed in Manitoba it might already be in operation and the Minister of Agriculture would have the information. I knew that grasshoppers were considered a delicacy in Japan and reports had them valued at \$3.75 a pound, delivered frozen to Japan.

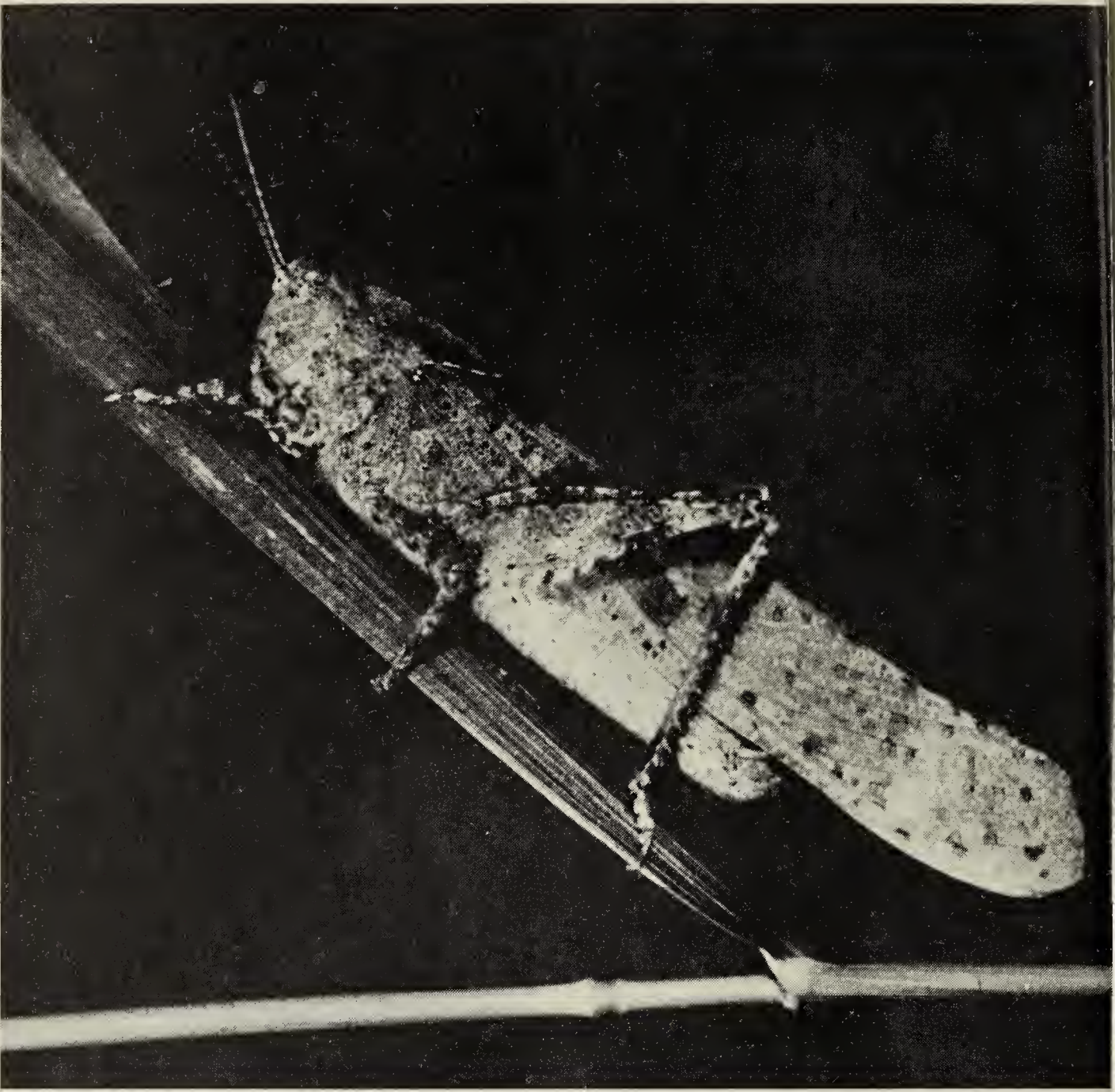
I sent copies to the federal and provincial ministers of agriculture

because I thought they should be informed: harvesting grasshoppers might be an alternative to using poisonous spray in an attempt to eradicate them ...

At the time I sent the telegram I was really getting fed up with the experts in the provincial department of agriculture who sit in air-conditioned offices and advise farmers to get out and spray. I don't believe they understand fully the biological implications of the admittedly poisonous chemicals in the recommended spray — either to the micro-organisms in the soil or to the farmer who uses it. I don't believe I can spray a grasshopper on the ground with poisonous chemicals without doing damage to myself. Yet farmers are really under pressure to use the recommended insecticides. There is a natural instinct to protect the crop and, more recently, the high price for farm products has changed the whole atmosphere into that of a poker game for high stakes where grasshoppers, high prices, insecticides and weather are the cards turned up while the farmers' health and the consumers' health are the hole cards that nobody sees until the game is over.

I found the most difficult pressure to resist was from my neighbour farmers. Mine were very nice, but I felt an undercurrent that implied that anyone who didn't spray was not keeping up his responsibility — that his 'hoppers would likely move over to the neighbours' land and destroy their crops too.

*Davidson, Saskatchewan.



Grasshopper

Robert E. Gehlert

The ridiculous part of the grasshopper situation is that we all know that only the weather can destroy grasshoppers; if it is wet and cold when the eggs are hatching, they'll die, or if it is damp and cold when they are ready to lay their eggs, they won't lay, or if they do, the eggs won't hatch. In fact the cool, wet weather we had during August was ideal for destroying grasshoppers ...

As a result of copies of my telegram being sent to the press, Coleen Slater-Smith, a reporter for the *Regina Leader Post*, went to work on it and

discovered that a non-profit research foundation set up by 58 municipalities in the Brandon area in Manitoba was making a grasshopper harvester. She telephoned me and gave me the name of Mr. Bruce Danyluk, general manager of West-Man Regional Development Corporation, the firm making the harvester. She wrote an excellent article which appeared in the *Leader Post*, July 25.

I promptly phoned Mr. Danyluk who told me the equipment had not yet been tried out because no grasshoppers had yet hatched in the area. When I

suggested that he bring the harvester to the Davidson area he told me that they did not have the funds to travel that distance but gave me to understand that, if we would pay towards the expenses, something might be done.

As chairman of the *Back to the Farm Research Foundation*, I set about getting some money and on July 28 invited Mr. Danyluk to bring his harvester to Davidson; the money (\$700) had been guaranteed by Frank Dietz of Loreburn and Don Robertson of Liberty, two progressively-minded directors of the National Farmers Union, and by Mr. Jim Hutch of Moose Jaw. Mr. Hutch is president of the brine shrimp industry of Chaplin which markets brine shrimp, a tropical fish food, all over the world. Mr. Hutch had already sent two samples of dried grasshoppers to Japan this summer and was then in process of collecting a 20-pound frozen sample.

Since our research foundation had only recently been set up and had no funds to draw on, we first applied to the Saskatchewan Crop Insurance Board, but were turned down after a sympathetic hearing. Next we tried the Saskatchewan Research Council with the same results, although Mr. Evans, chairman, put us in contact with Mr. Hutch who has quick-freezing facilities for the brine shrimp industry at Moose Jaw. Mr. Hutch had done a considerable amount of research into the freezing of grasshoppers and was prepared to freeze 9 tons of grasshoppers at a time. He told us that grasshoppers should not be kept more than 7 hours before processing, otherwise they would start to deteriorate. On delivery, they would be blanched for 2 minutes, then quick frozen and packed in bulk for shipment, Mr. Hutch said.

We waited for Mr. Danyluk's reply

with great expectations but on August 2 the Board of Directors of West-Man Regional Development Incorporated met and turned down our invitation; they said they didn't think their equipment was good enough to take that far from their home base. It was most unfortunate because by now cool, damp weather had set in and the equipment may not get tested for some time.

It was unfortunate that we, in Saskatchewan, didn't have a chance to try the equipment, even if it didn't work well enough, because someone might have seen it in action and thought up ways to improve it or adapt it, as so much farm machinery has been adapted for farm use here on the prairies. Then we might have had some equipment ready for the next grasshopper infestation, whether it be next year or 10 years hence. As it is, we will have to postpone the development of a sane and sensible system to cope with the grasshopper problem and to reduce the chemical madness that was rampant in rural Saskatchewan this season and which, incidentally, sent at least 100 farmers for medical treatment.

We might have had an opportunity to turn a high protein food (3 grasshoppers, medium large, are equivalent in protein to 1 egg) into a profitable export. And I am sure we could have destroyed enough grasshoppers to feed all the poultry in Canada for the next 2 years.

In my opinion, grasshopper-harvesting's most important service could be prevention — it could prevent many of our farm women from becoming "chemical widows" and generations of yet unborn from suffering from the residue of dangerous chemicals in our food and in our environment.

POST-FLEDGING MOVEMENTS OF JUVENILE BALD EAGLES

PETER GERRARD^a JONATHON M. GERRARD^b
DOUGLAS W. A. WHITEFIELD^c and WILLIAM J. MAHER^d

The knowledge of post-fledging movements by Bald Eagles which we report in this article was obtained with the aid of a technique which we used for the first time in 1973. This involves the placement of one or several pieces of brightly coloured vinyl cloth around the birds' wings, as shown in Figure 4. These markers, when properly applied, do not hamper the birds' movements but make them individually identifiable. Several people in Saskatchewan and in northern states reported sightings of marked birds. This past summer (1974) we marked most of the young fledged at Besnard Lake in the same fashion. We ask that anyone who sees a young Bald Eagle with coloured cloth on its wings to report this observation to one of the authors. The information which we would like to receive is the sequence of colours on each wing, the date, time and place of sighting.

Young Bald Eagles, as with diurnal birds of prey, remain dependent on their parents for some time after they leave the nest. In this period of transition, the young eagles must acquire enough skill at both flying and food gathering to survive on their own. As a step towards understanding this phase of the eagle's development, we made a study of the distances from their nests to which fledglings wander, prior to and including the time of migration.

Study area — Besnard Lake is situated at Lat. 55°24'N on the southern edge of the Precambrian outcroppings, approximately 35 miles northwest of La Ronge, Saskatchewan. It is about 62 square miles in area with an irregular shoreline approximately 250 miles long. It has many islands.

Methods — In 1973, there were 26 or 27 Bald Eagle breeding areas on Besnard Lake. Eighteen of the young in 13 nests were individually marked with different combinations of red, yellow or green vinyl wing markers. The method was previously used successfully on Golden Eagles by Kochert.⁶

The age of the marked young was estimated from our April observations of nests and assuming a 35-day incubation period.¹ Later, at the time it was marked, each nestling was weighed and its wing and tail feathers were measured. A final estimate of the age was made by subjectively taking these measurements into account.

The age estimates are complicated by uncertainty regarding the incubation period² and individual variation in size. We consider the age estimates to be reliable within 5 days. Hatching spanned 5 weeks in the Besnard Lake eagle population so that

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(d)University of Saskatchewan, Saskatoon, Saskatchewan.

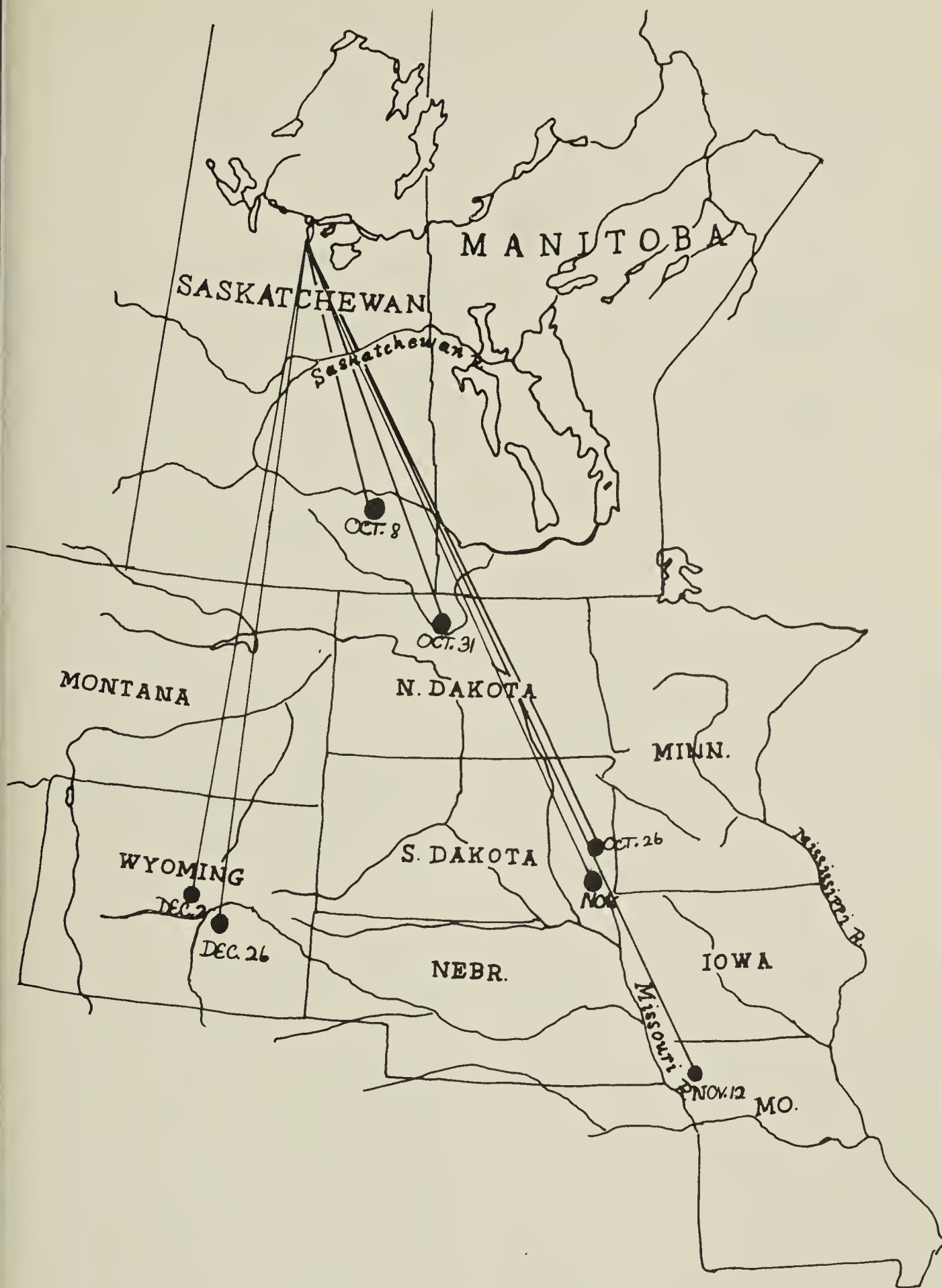


Fig. 1. Sightings of wing-marked Bald Eagles after they had left Besnard Lake.

there was considerable discrepancy in the age of young at any one time.

The status of young at the nests was checked frequently from a boat in July,

August and September. The distance and direction of each young eagle from its nest was noted when it was first seen and identified. If an immature eagle

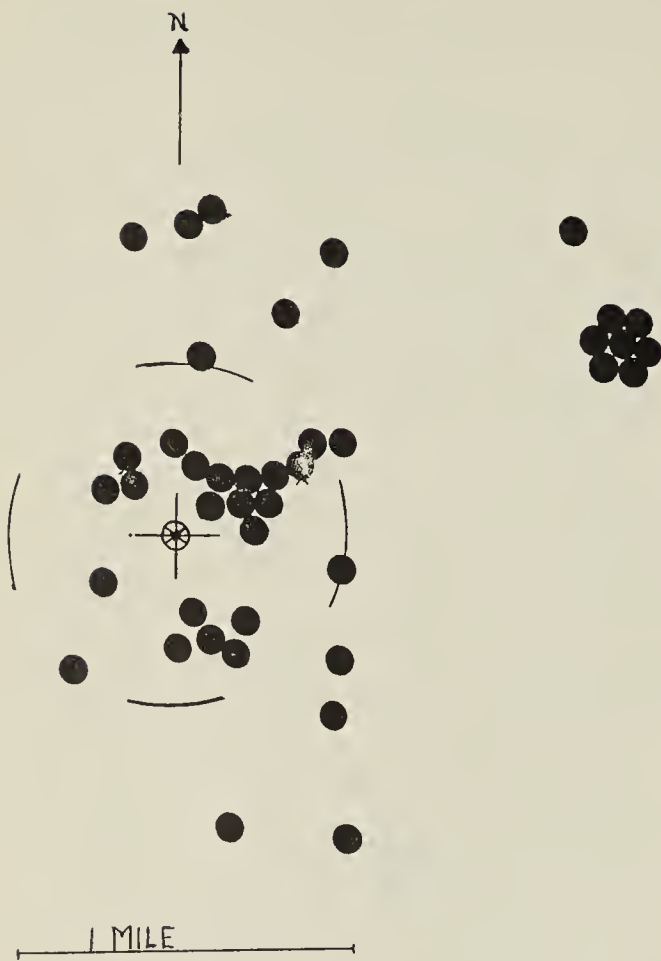


Fig. 2. Distance and direction from the nest of all sightings of Bald Eagle young at Besnard Lake.

was seen more than once in a day, only observations at least 6 hours apart were used. If a young eagle was not seen on a survey it was recorded as "not found". An immature eagle that was not found could have been on the ground, perched in a tree and concealed from our view, on a part of the lake not surveyed or away from Besnard Lake. Marked young which could not be identified clearly were not recorded and would then be included among those "not found".

In addition to nest surveys, the events at one nest were recorded by time-lapse photography. A super-8 mm movie camera, set to take one frame every 4 minutes, was mounted about 45 feet from a nest, (Nest S). It was installed when the young were 3 to 4 weeks old and it was maintained until August 17, 9 days after the second and last young had fledged.

Wind direction and estimated speed were recorded three times daily: morning, early afternoon and evening. These records were used to assess the relationship between wind and the movements of young eagles away from the nest.

Results — Most young fledged in the 2nd and 3rd weeks of August and stayed within 1.5 miles of the nest until the end of September (Table 1). A preliminary examination of our data showed that both early fledging and early apparent departure from the lake seemed to correlate with early hatching. Since we were interested in correlating the eagles' ages with their post-fledging movements, we have converted our data to weeks after hatching. (Table 2).

Most young were on the nest when first seen up to the end of the 11th week. Probably most of these had not yet fledged but some could have already left the nest and returned. Records of movements of young from one nest show that some young return to the nest platform up to 6 weeks after fledging (Table 3). Most young fledged in their 12th or 13th weeks. This was a little later than in 1972 when young generally fledged during the 10th, 11th and 12th weeks³ and suggests that the exact timing of fledging may be somewhat variable, perhaps depending on the weather at fledging time or on the food supply during nestling period. The majority of young seen in their 12th to 14th weeks were either on the nest (42 percent) or within 1/8 mile of it (32 percent, Table 2). A few (17 percent), however had wandered 1/8 to 1/2 mile from the nest and 9 percent had moved even farther. At this age the young generally perched in trees but a few (11 percent) were seen on the ground. Dark brown young eagles are fairly well camouflaged on such low perches and

Table 1.
Distances of young Bald Eagles from the nest in 1973
as a function of date.

Date	In Nest Tree	1/8	Miles from nest				Not found	300+	Total
			>1/8-1/4	>1/4-1/2	>1/2-1	>1			
Aug. 1-7	20						1		21
Aug. 8-14	6	3		1			5		15
Aug. 15-21	5	5	1	3	2	1	11		28
Aug. 22-28	4	5	2	2	1	1	5		20
Aug. 29- Sept. 4	4	6				3	3		17
Sept. 5-11	3	1	3	1		2	3		13
Sept. 12-18	3	2				1	3		9
Sept. 19-25	1	2	3			1	7		14
Sept. 26 - Oct. 2		3	3	2	4		8		20
Oct. 3-10	1	4	1		3		23	1	33
Oct. 25-31								2	2
Nov. 8-14								1	1

often difficult to see. This probably accounts for the 36 percent of the known young which were not found.

In the 15th to 17th weeks, 3 to 4 weeks after fledging, 28 percent of young actually seen were within 1/8 mile of the nest and only 21 percent

were on the nest itself. The reduced proportion of the young at the nest when first seen, compared with the 12- to 14-week old young, reflected a decreasing but continuing use of the nest for a perch, a feeding station or a roosting site. Fifty percent of the young seen were more than 1/8 mile

Table 2.
Distances of young Bald Eagles from the nest in 1973
as a function of age.

Weeks after hatching	In Nest tree	1/8	Miles from nest				Not found	300+	Total
			>1/8-1/4	>1/4-1/2	>1/2-1	>1			
9	24	1							25
10	8								8
11	21						1		22
12	8	4					6		18
13	4	6	2	1		1	8		22
14	5	3		4	2	1	9		24
15	1	3	2	1	1	3	3		14
16	1	2					3		6
17	4	3	3	1		3	4		18
18	1	6	2		1	1	6		17
19			2				6		8
20	1	3	2	2	4		9		21
21					2		14	1	17
24								2	2
26								1	1

Table 3.
Records of movements of two young Bald Eagles and adults
at Nest S during fledging period.*

Date	Older eaglet	Young eaglet	Adults
July 30	Left nest in morning.	—	—
Aug. 8	—	Left nest and was then on and off nest periodically during the day. Roosted on nest.	Adult brought a fish to the nest about midday.
Aug. 9	—	Left nest in late afternoon.	—
Aug. 10	—	Visited nest briefly in the evening.	Adult brought a fish to the nest in the morning, stayed about 20 minutes, then left.
Aug. 12-15	—	Spent most of the time on nest during the day.	—
Aug. 17	Visited nest briefly while youngest eaglet fed.	On nest in early morning, then left. Returned to eat fish brought in by adult.	Adult brought a fish to nest, stayed about 1-1/2 hours, then left when younger eaglet returned.
Aug. 20	Seen flying over nest area.	—	—
Aug. 27	Perched near top of spruce tree 1/2 mile east of nest.	1/8 mile SW of nest.	Two adults near nest.
Sept. 11	On nest.	On nest.	—
Sept. 19	1/4 mile NE of nest.	1/4 mile NE of nest.	Adult near nest.
Sept. 26	1/4 mile NE of nest.	1/4 mile NE of nest.	Two adults near nest.
Oct. 2	Not seen.	1/4 mile NE of nest.	Adult near nest.

*Includes all observations of two fledged young at Nest S from 30 July and all observations of adults after August 8. Observations to August 17 are based on time-lapse photographs. Observations after August 17 were made on visits to the nest.

from the nest. During this period, the young tended to perch higher in the trees than they did earlier, where they were conspicuous, and only 26 percent of the known young were not found.

In the succeeding weeks there was a general movement away from the nests, although even as late as the 20th week one young was seen perched within a few feet of its nest. In the 18th to 20th weeks, 6 to 7 weeks after

fledging, the use of the nest continued to decline with only two young (8 percent of those seen) on it. Most of the young, however, remained within 1-1/2 miles of the nest with 36 percent of those seen still within 1/8 mile of the nest and 56 percent between 1/8 and 1 mile of the nest. The proportion of young not found (45 percent of the known young) was higher than in the previous age groups, probably reflec-

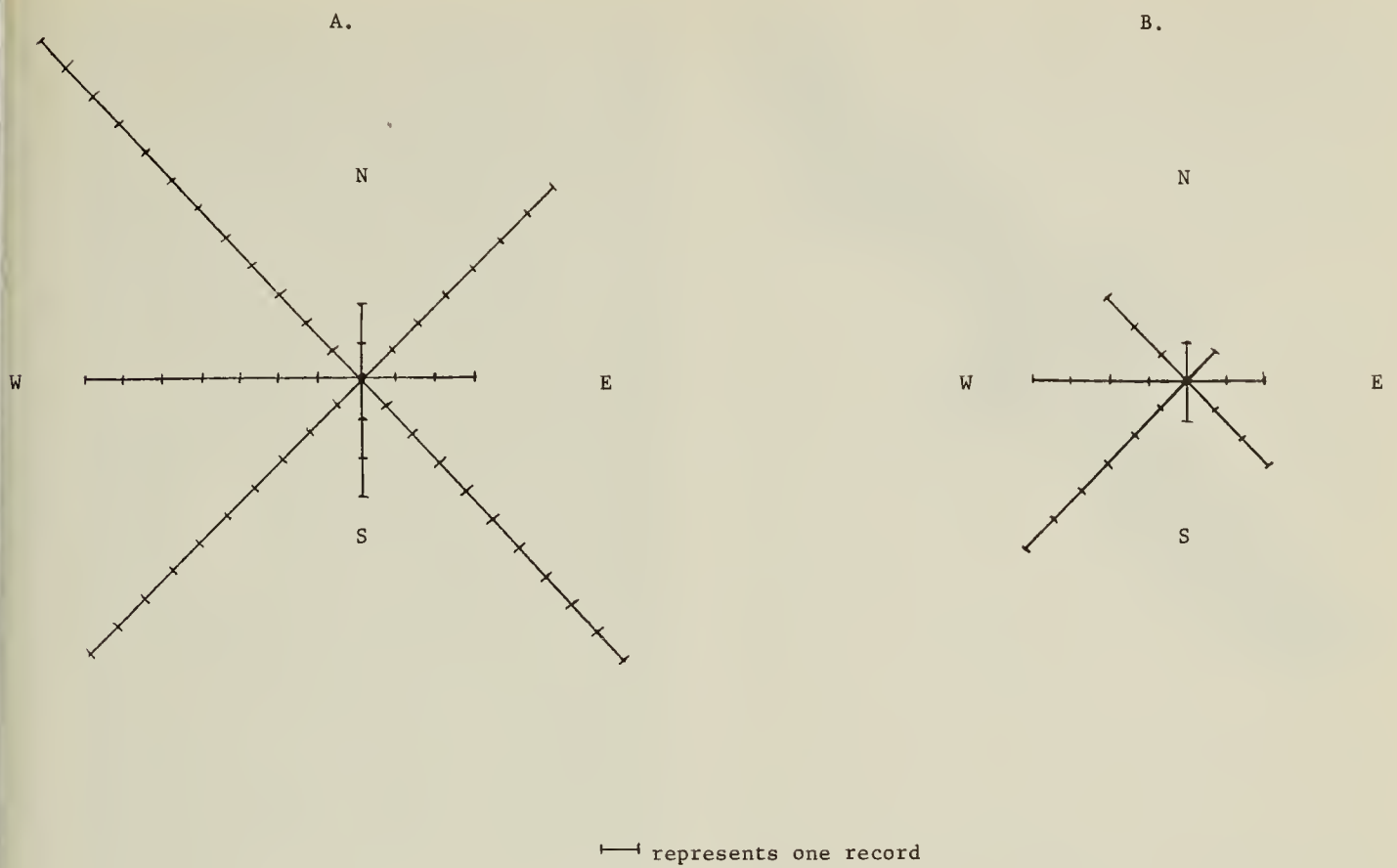


Fig. 3. Cumulative records of wind speed and direction at Besnard Lake in 1973. A. Winds over 5 mph. B. Winds over 10 mph.

ting the beginning of the movement off the lake to areas where we could not observe them. One of the young found near the nest during this period was on the ground unable to fly. Later evaluation showed a healed fracture of one wing. This bird had been found off the nest in its 9th week, 3 weeks earlier than most other young, and had probably sustained the fracture in its initial fall from the nest. It was healthy in other respects and had clearly been well fed by its parent. This bird was sent to Montreal to participate in a breeding project.

The first indication of general movement of young eagles off the lake was in the 21st week. Only two of 16 young thought to be on Besnard Lake were found. At the same time Glen Scott, of Indian Head, Saskatchewan, spotted a young eagle in its 21st week about 350 miles south southeast of Besnard Lake. Six later reports gave more information on the movement southward (Fig. 1).

Analysis and Discussion — In analyzing the movement of the young eagles away from the nest we were intrigued by a tendency for them to move east and north (Fig. 2). When we analyzed this movement statistically we found that it was not random (chi-square test, $P < 0.001$). It remained non-random even if we treated as one all the sightings of one young (see below) which moved to an area northeast of the nest (chi-square test, $P < 0.01$). Six sightings of this young were omitted because its perch could be seen from our camp island and we could see no other young from this point.

We had noted that subadult Bald Eagles (ages 2-4 years) summering on Besnard Lake tended to drift downwind when moving around the lake,⁴ and we wondered if wind direction might also influence the movements of the fledged young. On the assumption that light winds would have little effect on eagle movements, we analyzed separately all winds greater than 5



Fig. 4 Wing markers as seen from above.

m.p.h. and all winds greater than 10 m.p.h. (Fig. 3). In each case, we grouped sightings of eagles into the eight major compass points $\pm 45^\circ$, and matched these with winds blowing in the same directions. The results suggested a highly significant association between winds greater than 10 m.p.h. and the directions the young eagles moved ($r=0.85$, $DF=6$,

$P<0.01$). This seems to suggest that the nest bond of young eagles in the immediate post-fledging period gradually weakens and that, in the absence of any purposive migratory orientation, their movement from the nest is influenced by the wind. Young eagles appear to be carried away from the nest by strong winds and lacking a definite drive to return to the nest when the wind dies they are gradually distributed downwind from it. The actual direction of movement is also influenced by the direction of the shoreline since the birds tend to follow shorelines rather than move overland.

One observation made on August 3, 1972, by A. Moulin and N. Gerrard supports this thesis. They were watching two recently fledged young at a nest with a stiff breeze blowing from the northeast (about 15 mph). At 11:01 hours, one of the immatures began circling over the north end of its nest island. Very quickly it gained height and drifted off to the west. If it had gone directly downwind, southwest, it would have left the lake, whereas in



Fig. 5. An aerial view of Besnard Lake showing characteristic irregular shoreline and small islands.



Fig. 6. A young eagle 10 weeks old with two markers on the right wing. The outer marker is easily visible. A small part of the inside marker can be seen just behind the outside marker.

deviating to the west, it followed a channel of the lake. It was not until 3 weeks later (August 27) that two young were again seen near this nest, although the area was watched for 4 hours on August 13, and 9 hours on August 18. Knowing the difficulty that the young had in landing and in flight on August 2, it was thought that this young would have had difficulty in returning to the island once it was soaring on the strong wind of August 3. The implications of this observation for movements of young eagles in the post-fledging period were not appreciated until later.

It is apparent from observations of one young at another nest, that wind is not the only reason for movements of young. On August 12, this bird flushed from the nest and flew at a right angle to the wind to a small island 1.4 miles east-northeast of its nest island. It was observed on this island from time to

time until September 21. Attachment may develop for a particularly suitable perch site after fledging and such places, once visited and "learned" by a young bird, may be more frequently visited thereafter.

The waning attachment of young eagles for the nest site and the tendency for gradual downwind dispersal from the nest is replaced in the 20th and 21st weeks by oriented migratory movement. The seven sightings of marked young eagles (Fig. 1) indicate this and suggest a relatively slow southward movement.

Summary and Conclusions — Fledged young Bald Eagles have a strong nest-site bond which gradually weakens as they mature. By the 3rd or 4th week after fledging, half of the young seen were more than 1/8 mile from the nest. Most young were within 1 mile of their nests through their 20th week, 7 weeks after fledging. Movement away from the nest in this period tended to be east and north. The direction of movement correlates with direction of winds over 10 miles per hour and suggests that as their nest-site bond weakens, young eagles take the course of least resistance and drift downwind and tend to follow the lake shore. In the 7th to 8th weeks after fledging, when chicks are in their 21st week, a strong migratory drive develops and the birds depart from Besnard Lake.

Acknowledgements

Our studies were supported financially by the Canadian Wildlife Service, Environment Canada, and the Saskatchewan Department of Natural Resources. The following contributed observations of wing-marked eagles: Rob Hernandez, Alex Farley, Allan Moulin, Joe Daly, Naomi Gerrard, Nikke Higgins, John Hastings, Cory



Fig. 7. The same young eagle seen in Fig. 6, showing the wing marker on the left wing. This marker is close to the body and has been preened by the eagle so that it is only barely visible.

Siemans, Glen Scott, Don Perchuchin, Mrs. Harvey Mills, Terry DeBeer, Bruce Wolhunter, W. C. Foss, C. Upton and J. Hutchinson.

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GOLDEN EAGLES ATTACK WHITE-FRONTED GEESE

by ERNIE KUYT*

Food habits of Golden Eagles have been discussed by a number of authors, particularly by researchers in Montana and portions of the southwestern U.S.A.^{2 3 4 6 7} Lagomorphs were the principal prey taken. Bird remains found near eagle nest sites and in pellets were of much lesser importance. Smith reported eagles killing domestic geese but noted that such predation on domestic species was negligible.⁹ Further north, Whitfield et al. reported similar eagle food habits with Common Raven feathers the only bird remains identified to species.¹⁰ Murie considered the Golden Eagle's effect on bird life in Alaska's Mount McKinley area to be insignificant.⁸ Höhn's record of a Golden Eagle knocking down a White-fronted Goose near the Anderson River is the most pertinent one.⁵

During the spring and summer of 1972, the Canadian Wildlife Service carried out waterfowl studies in the N.W.T. from base camps at the mouths of the Anderson River (69°42'N., 128°57'W.) and Mason River (69°56'N., 128°24'W.). Deltas of both rivers are important nesting and moulting areas for White-fronted Geese.¹ During the moulting period flightless geese are taken in traps and banded. Juveniles are sometimes captured and banded on shores of lakes and rivers after having been driven ashore by boats.

During my periods of fieldwork in the area, three interactions between Golden Eagles and White-fronted Geese were observed.

About 15 miles upriver from the mouth of the Anderson River on July 10, 1973, we saw eight White-fronted Geese going ashore ahead of our canoe. We made a landing to try to catch them. When we were following the geese we heard a startling noise and looked up just in time to see a Golden Eagle slam into the willows about 25 yards ahead of us. The eagle took off immediately and from near the eagle's impact site we captured a moulting White-front. The bird's back seemed only slightly bruised by the eagle but when the goose (incidentally, banded by us a few days earlier about 10 miles away) was released on the river it rapidly weakened and was dead when again picked up. An autopsy revealed a massive hemorrhage in the lung area. The eagle, by the absence of white in wings and tail, was judged to be an adult.

Near the mouth of the Mason River on July 15, 1973, broods of five and six White-fronts with their parents were seen from our canoe. The geese were on the edge of the river and at our approach two of the adults flew to a shallow tide pool a short distance away. A Golden Eagle stooped at these two geese and although contact was made with one of them, the geese flew off apparently unharmed. The eagle, perhaps unable to make a solid hit because of the last second evasive action by the goose, hit the tide pool in a

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rather steep angle and cartwheeled twice. The eagle then stood up, shook itself and flew off slowly to a nearby ridge. The eagle had a white tail with dark terminal band and was labelled as immature.

We had beached our canoe on July 19, 1973, along a channel about 7 miles south of the mouth of the Anderson River and I had just crouched down to pick up a White-front gosling when an eagle roared past me and slammed into 2-foot tall willows not 15 feet ahead of me. Two adult White-fronts, hitherto unseen, flew out of the willows. The eagle, an immature Golden, was unable to get up because its wings were caught in the willows. I quickly got a banding net and caught it. After it was banded, the eagle flew away normally.

In each of these three cases we disturbed the geese and, in fleeing from us, they apparently failed to see the eagles until it was almost too late. Have eagles in this area learned that man's activities may force potential prey, otherwise not available, out of

cover? It appears from the above three separate and closely spaced incidents that well-intended disturbance by man could contribute to mortality of moulting geese.

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Golden Eagle

Fred Lahrman

A PROBABLE LITTLE GULL RECORD FOR SOUTHERN MANITOBA

by MARTIN K. McNICHOLL*

In late September, 1970, I observed an oddly plumaged gull in a flock of Bonaparte's Gulls along the southern shore of Lake Dauphin in Manitoba. Although I was unable to identify the gull at the time, a comparison of my notes with descriptions in the literature convinces me that I observed an immature Little Gull in a little known plumage. As the record was not verified by other observers and not substantiated with photographs or a specimen, it must remain hypothetical. However, in view of the rarity of the bird and high probability it was a Little Gull, I wish to place the observation on record. Hopefully this note will alert others of the features of this gull.

The gull in question was somewhat smaller than its companion Bonaparte's Gulls, but its tern-like flight and feeding behaviour was similar to theirs. Both the mystery bird and the Bonaparte's Gulls also showed a distinct terminal tail band, light feet and black spot behind the eye, at the level of the ear. However the smaller gull differed in having a squared-off not rounded tail. In addition the brownish bar crossing the Bonaparte's wing diagonally from the body at a point anterior to the trailing edge of the wing to the carpal joint, was replaced on this bird by a similarly placed black bar. These

behavioural, size and plumage features all agree with those given for the Little Gull in standard field guides and regional bird books, such as those by Godfrey,³ Hollam⁴ and Peterson *et al.*⁸ However, the bird also had a rich brownish streak across the nape in the position of a black streak often said to help identify the immature Black-legged Kittiwake and distinguish it from the Little Gull.^{4 8} Thus, the bird on Lake Dauphin seemed to fit the descriptions of neither the Little Gull nor the Black-legged Kittiwake, differing from the latter in size, light feet and light nape bar. A paper by Ennis² seems to clarify this puzzle. He described several cases of Little Gulls in Great Britain in typical immature plumage except for a "sepia bar across the nape," just like the bird I observed. Thus the gull on Lake Dauphin was very likely an immature Little Gull.

The Little Gull is an old-world species of which there were extremely few records for North America early in this century.⁷ Records for eastern North America, especially the Maritimes and New England became increasingly frequent however until the species became regular there,^{1 3} culminating in an Ontario breeding record in 1962.^{1 11} Records for the prairie provinces, however, are scarce. An old, often quoted, record for Saskatchewan is uncertain at best,⁵ but one was collected on Lake Athabasca in 1962,⁶ and another observed and photographed in Regina in 1973.¹³ The

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only Manitoba record of which I am aware is of one seen at Churchill in July of 1970.⁹ No records appear to exist for either Alberta or North Dakota.^{10 12}

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¹¹STEWART, R. E. 1971. *Check list of birds in North Dakota*. Prairie Nat. 3: 3-12.

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MORE GREAT CRESTED FLYCATCHERS AND SHORT-BILLED MARSH WRENS IN ALBERTA

by WAYNE C. WEBER*

On the morning of June 15, 1972, I observed a Great Crested Flycatcher near the Administration Office in Elk Island National Park, Alberta, about 25 miles east of Edmonton. After initially identifying the bird, I left and returned shortly with Marg Reine, then Acting Park Naturalist, and Ken Richards, Seasonal Park Naturalist. The three of us watched the bird for

about 10 minutes. During this time, I recorded in my field notes that the bird was about the size of an Eastern Kingbird, with an ashy-gray throat and upper breast and a pale yellow lower breast and abdomen. The head and upperparts were a medium brown colour and the tail was rufous, with a suggestion of rufous in the wings as well. The calls were noted as an up-slurred "wheep!" and a rolling "breer! breer!". The bird was not seen again in 1972, despite almost daily visits to this locality.

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On July 2, 1972, I saw another Great Crested Flycatcher just west of St. Paul, Alberta, about 1 mile south of Provincial Highway 28 on the Lac Bellevue-Lafond road. This individual was first seen briefly at a range of about 50 feet at 6:00 p.m., and it (or another bird) was seen again nearby under similar circumstances from 6:30 to 6:45. It was not observed closely, but the yellow belly and reddish tail were distinctly noted, and the "wheep" call was given repeatedly. The bird was judged to be about kingbird size or a little smaller.

A third Crested Flycatcher sighting was made on the morning of July 6, 1974, in Elk Island National Park at the home of W. Jack Schick, Park Naturalist. It was seen perched on a fence, at a distance of about 15 feet, by Mr. Schick, my wife, Wendy, and me. All field marks were observed on this bird, including the slightly crested appearance of the head, but it gave no calls. This locality is only a few hundred feet from the site of the 1972 sighting in the park.

I am thoroughly familiar with the Great Crested Flycatcher, having studied birds in southern Ontario where the species is common.

The first record of this species in Alberta is apparently that of R. D. Ussher⁷, who reported hearing one on July 16, 1939, and subsequent dates at Astotin Lake in Elk Island Park and seeing a single bird twice on July 23 on Long Island in the lake. This record is also referred to by Soper⁶. Although Ussher, as was usual in those days, did not describe the bird in detail, the two recent sightings in Elk Island Park indicate that his identification may indeed have been correct.

The second sighting was made by Edgar T. Jones, who saw a pair on June 26, 1963, at the Ministik Lake provincial campsite on Highway 14

just east of Cooking Lake, Alberta. Mr. Jones writes (letter of September 13, 1974): "I observed for some 20 minutes a pair which I initially thought would be nesting but observation at the time and later (a check) revealed no evidence even though there were many suitable nesting holes in the area. The birds had been reported to me the day previously by a couple of young lads (unfortunately, I cannot recall their names) and since their description seemed accurate, I took the time to investigate. There was no question about their identity . . . Both birds were feeding off high spruce well back from the highway and made no sounds during the observation."

According to W. Ray Salt (pers. comm.), the records of Ussher and Jones formed the basis for the inclusion of the Great Crested Flycatcher on the hypothetical list for Alberta by Salt and Wilk.⁵

Greenlee lists numerous sightings of the Great Crested Flycatcher in the Two Hills region of Alberta in 1971 and 1972.^{2 3} Dr. Salt has also informed me that there are other records of the species in Alberta, which are currently under review by the Alberta Ornithological Records Committee. The recent increase in sightings may have resulted either from a true increase in numbers or merely increased observation; however, an apparent increase in numbers in Saskatchewan recently⁴ favours the first explanation. I suspect that Great Crested Flycatchers have long been present but have been overlooked in east-central Alberta, but have indeed increased in the last few years. (It seems hard to miss such a noisy bird!) It still remains, however, for the first Alberta photograph, specimen, or nest record of the species to be obtained.

Another unusual bird I observed in 1972 was a Short-billed Marsh Wren seen on July 3 near Bonnyville, Alta.



Short-billed Marsh Wren at Madge Lake, Saskatchewan.

Fred Lahrman

The bird was first heard singing at about 7:30 a.m. while I was carrying out a Breeding Bird Survey and I was able to see it when I returned to the locality between 12:00 and 12:30. It was seen from the side for about half a minute and was also glimpsed momentarily on several other occasions. The

bird, which was about the size of a Long-billed Marsh Wren, had a light stripe over the eye but not nearly as obvious as in the Long-billed. The sides were very buffy and there were light-coloured dots on the wings. However, the top of the crown and the under-tail coverts — the two best

field marks — could not be seen clearly. The identification was clinched, nevertheless, by the voice, which I described in my notebook as “a series of short notes, running into a trill; repetitive, unlike Long-billed Marsh Wren”. The call-note was a low trebled “chut-chut-chut”. The habitat was a dry sedge meadow with scattered clumps of willows — typical for this species but entirely inappropriate for a Long-billed Marsh Wren. I am familiar with the Long-billed Marsh Wren and have heard and seen the Short-billed previously in Ontario.

A second Short-billed Marsh Wren was heard singing later the same day in similar habitat just over the line in Saskatchewan — about 6 miles west of Pierceland — but it could not be seen.

The breeding range of the Short-billed Marsh Wren is known to extend west only to central Saskatchewan¹; however, C. Stuart Houston (pers. comm.) tells me that there have been several sight records in central-western Saskatchewan, where nesting has not yet been proven. Salt and Wilk⁵ list records from five localities in Alberta, including breeding-season records from Glenevis. Bonnyville may be only the second Alberta locality where the species has been seen during the breeding season and no nest has yet been found in the province.

Recently, the Alberta Ornithological Records Committee has been established for the purpose of reviewing sight records of bird species unusual in the province (*Blue Jay* 32: 114, 1974). While none of the sightings mentioned here has yet been officially accepted by the Committee, I wish to place them on record in order that the Committee and other interested persons will have a basis on which to assess their validity. The work of the Committee should do

much to upgrade the standards of field observation in general, and particularly to encourage observers to record details *in the field* whenever they see an unusual bird.

All of the sightings reported above, with the exception of the 1974 Crested Flycatcher sighting, were made while I was employed as a Seasonal Park Naturalist at Elk Island National Park. I would also like to point out that the two Short-billed Marsh Wren records, the St. Paul record of the Great Crested Flycatcher and the initial discovery of Great Crested Flycatchers near Two Hills by Graeme Greenlee, were all made while the observers were participating in the Co-operative Breeding Bird Survey, sponsored by the U.S. Bureau of Sport Fisheries & Wildlife and the Canadian Wildlife Service, or while the observers were birding near survey routes. This emphasizes the value of the Breeding Bird Survey in one of its major purposes, that of accurately mapping the breeding ranges of North American birds.

I am grateful to Edgar T. Jones for permission to quote his previously unpublished Great Crested Flycatcher sighting. I would also like to thank C. Stuart Houston and W. Ray Salt for helpful comments and advice.

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FIVE VIREOS AT FORT QU'APPELLE, 1972 AND 1973

by E. MANLEY CALLIN*

The year 1973 might well be called "the year of the Vireo" at Fort Qu'Appelle. The official list of Saskatchewan birds (Field check-list of Saskatchewan birds, 5th edition, June 1, 1969) includes five species of vireos. Two of these species, the Warbling and the Red-eyed, are regular and common summer residents in our area but the other three species are considered rare or uncommon transients here. In 1973 all five species were recorded at Fort Qu'Appelle and four of these were heard or seen on one day (June 12, 1973) in the small wooded area on our two lots in Fort Qu'Appelle. It would seem impossible for me to ever again repeat either of these records. Some details on the occurrence of the three relatively rare species follow:

Solitary Vireo: The Solitary Vireo was probably first seen and heard on May 19, 1973, in a coulee to the southwest of Fort Qu'Appelle but the details of observation were not quite satisfactory. On May 21 three birds were heard singing at once and fairly close together in the same area; one was seen and all birds were followed by sound for a considerable time as they foraged slowly down the coulee. On May 26 I had a beautiful view of one silent bird near the bridge over the Qu'Appelle River at Lebret.

I have records of the Solitary in only 6 of the 47 previous years.

Yellow-throated Vireo: A male of this species awakened me at 6:15 a.m. on June 12, 1973, by singing in the woods

by our house. It was not seen at this time but was observed many times from 6:00 to 8:00 p.m. on the same day in the trees across our back alley. It was not seen or heard again.

It is of special interest that a male spent all or most of the time in these woods for a full month in 1972 — from May 14 to June 15. It was last seen by David Hatch and myself on June 14, 1972.

I have recorded the Yellow-throated in only 2 of the last 47 years.

Philadelphia Vireo: At about 10:00 a.m. on June 12, 1973, while trying to get a view of the Yellow-throated, I heard a vireo song in our woods which very definitely lacked the distinctive "burry" quality of that species. Neither did it sound quite right for a Red-eyed as it seemed to lack the volume; it seemed higher in pitch and the notes were not as full and rich. It was difficult to get a good view of this bird as it foraged high in the trees and among the leaves but it proved to be the first Philadelphia I had knowingly heard. The bird remained in this small area for 6 days (June 12 to 17) and was frequently heard and seen. Repeated reference to Peterson's song recordings suggested that this particular individual of the Philadelphia had greater differences from the Red-eyed than is indicated in those recordings.

I have observed the Philadelphia in only 1 of the 47 previous years.

In summary, it is interesting to note the late dates of the Yellow-throated and Philadelphia vireos. One is in-

*Fort Qu'Appelle, Saskatchewan.

clined to speculate that these males did not find a mate here and also to

wonder whether they might have nested if they had found a mate.

THE AUTHENTIC SPARROW HOUSE?

by VIRGINIA BARTKOW*

"The woodpecker pecked out
a little round hole
And made him a house
in the telephone pole."

So went the nursery rhyme by Elizabeth Madox Roberts, but that is not how it happened in our garden.

Several years ago I asked Michael to build me a bird house. He did, but being a perfectionist, had to make it authentic — an authentic sparrow house. For two years it was empty; no authentic sparrows showed up, and all the other birds ignored it. And then we moved to Langford.

Almost immediately it was occupied by sparrows. However, their tenancy was challenged by starlings, so Michael had to put a new front with a smaller hole, over the opening. The second year, swallows tried to drive the sparrows out but were unsuccessful, and nested instead in a small Tupperware birdhouse at which, Michael said scornfully, no self-respecting bird of any kind would even look. He had barely hung it up before the swallows were in.

The next year, so there would be plenty of nests for everyone, and stimulated by the bluebird nesting competition, Michael built several new houses, single ones, double ones, round, square and octagonal. We had

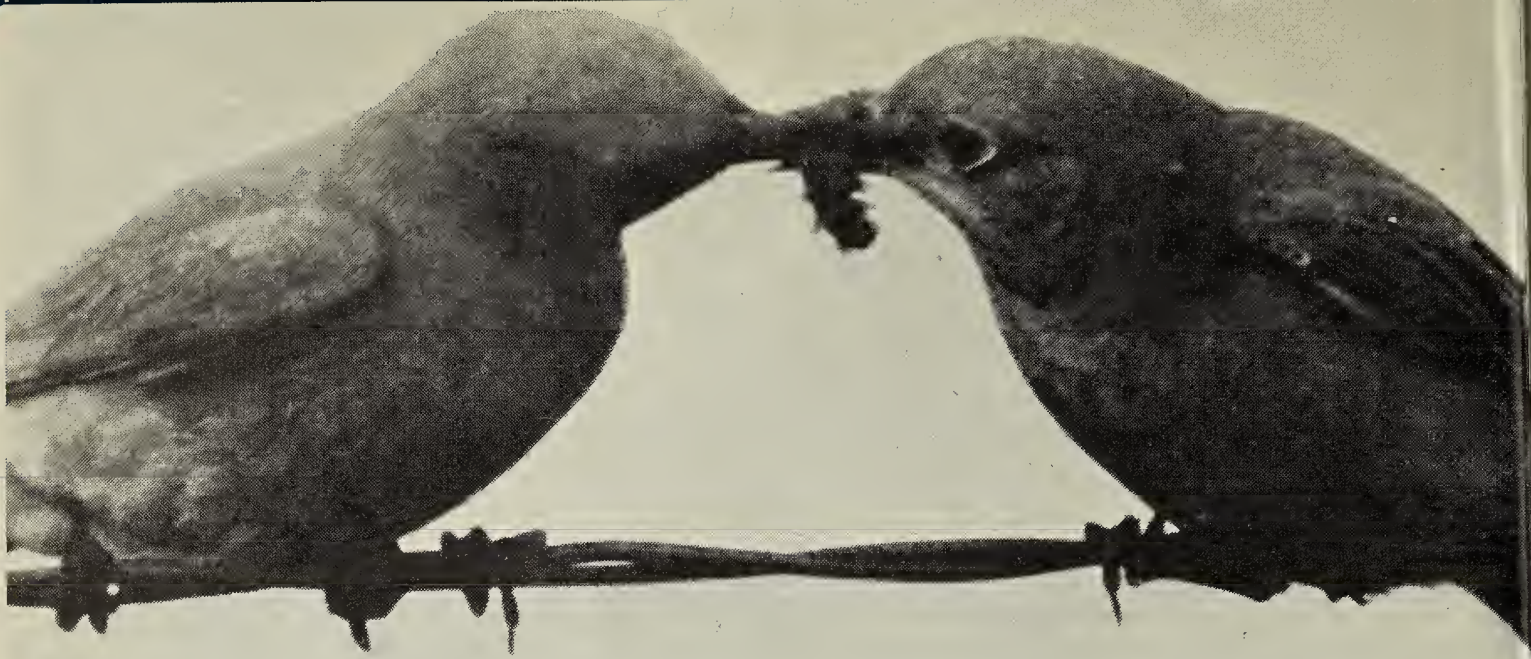
them all up in plenty of time, but the year was late all down the line . . . The sparrows and swallows fought intermittently over the sparrow house, until finally the swallows got down to business and raised one family in it.

The only birds that were completely organized were the nuthatches. They have a nest in a red alder — a tiny slit in the trunk, so narrow that even when the bird vanishes you don't believe it. Every year they raise three families in this nest, but last year there was extra activity. One busy little female filled every bird house in the garden, except the sparrow house, with twigs, stuffing the holes so that nothing but a nuthatch or a chickadee could possibly get into them, and after every twig was laboriously jimmied into position, she would carol out a paean of accomplishment.

Now it is late November, and every house is busy with birds. Somehow they have managed to move the nuthatch twigs, and apparently are evaluating the nesting possibilities — sitting inside, peering out the doors, chirping to their mates. All but the sparrow house, and that has been appropriated by a Hairy Woodpecker! Happy "Hairy" pounded away until the hole was bigger than the original opening, squeezed inside,

"And as I watched, he poked
out his head,
Black and white and topped
with red."

*Reprinted from *Victoria Naturalist*, Jan., 1974.



Mountain Bluebirds

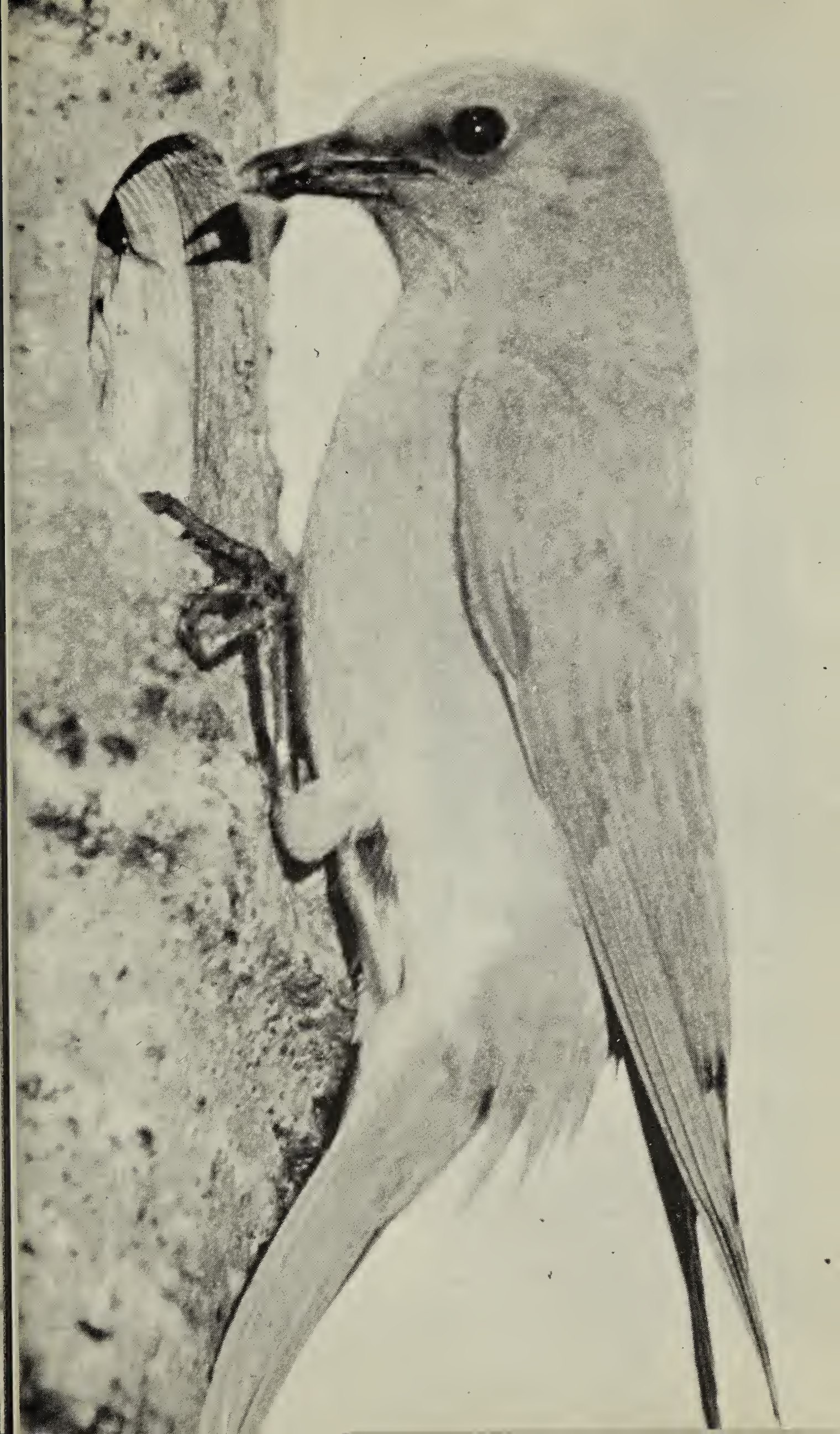
Robert J. Long

Adult male Mountain Bluebird. Robert J. L

A boxful of young Mountain Bluebirds

Fred Lahrman





FOURTEENTH ANNUAL NESTBOX REPORT OF THE BRANDON JUNIOR BIRDERS

by JOHN LANE* and
TONY BURTON**

In contrast to the year before, the winter of 1973-74 proved to be very severe and we set out less than 100 new nestboxes before the roads became impassable. In the spring of 1974 we got a few more out plus 100 rebuilds and we took another 100 up to Jim Spear at Russell, Manitoba, in mid-May to bring our overall total to 4,355 nestboxes in operation. Also, a start was made in moving nests from the Trans-Canada Highway to new locations, as that highway is to be double-laned between Brandon and Portage La Prairie and we had been advised that our nestboxes should be moved out of the way while the work is done.

1974 was not a very successful year for nesting bluebirds. An extremely cold and late spring kept birds from a normal start in their egg laying and we found a larger than usual number of clutches of abandoned eggs. Even where nestings were successful, the number of unhatched eggs set a new record; it was a common occurrence to find only two, three or four young in a nest of Mountain Bluebirds, where in other years it would have been four, five, six, or more. In addition, 1974 was plagued by a recurrence of black flies (*Simulium venustum*) and most of the first broods in the areas south and west of Brandon suffered severely from these swarming demons. Our experiences with black flies in 1970 and 1972 had prepared us for this year's invasion in that we had enlisted the help of the Department of Agriculture,

Winnipeg; A. J. Kolach of that department came out to Brandon to give aid and advice. He furnished a quantity of chemical strip which is effective against insects, but because of our ignorance as to how large a piece we dared place in a nestbox, the product was ineffective this year. By the time the flies finished swarming we estimated a loss of 500 young bluebirds.

On the brighter side, Ed Robinson of Wawanesa reported the best year yet on his "Southeast Line". Art Michie and his "Southwest Line" around Souris were in the black fly country but second-broods were very good. Jim Spear at Russell expanded his lines further into the Assiniboine valley northwest of town and, in addition to a fine year with Mountain Bluebirds, had no less than eight Eastern Bluebird nestings. Saskatchewanites please take note, since these birds were at their very door.

The early summer was enlivened by a visit from Dr. D. Krieg of State University, New York. Dr. Krieg has made several trips to Brandon during the past years to study the interspecific actions and attitudes of the two bluebird species, with particular interest in the whys and hows of crossbreeding. Dr. Krieg took back with him two young from the first of three such nestings we found this year: the first from Clariere with just the two young, a second in the wildlife refuge area south of Hooke's Ranch, and the third just west of Sidney on the C.P.R. The first and third were the rare Mountain male x Eastern female cross.

We had hoped to have a really good year of banding and had set a goal of 3,000 bluebirds for this year, but due to several reasons we fell short, only 2,361 being actually banded. By means of a 80% check, 20% estimate, we have arrived at the following totals for 1974 nestings: Mountain Bluebird

* 1701 Lorne Avenue,
Brandon, Manitoba.

** 2363 Brandon Avenue,
Brandon, Manitoba.

(first broods only) 950; Eastern Bluebird (first broods) 160; Crossbred Bluebirds 3; Tree Swallow 2,550; House Sparrow 400; House Wren 40; deer mouse 100; red squirrel 10; Starling 5.

INDIAN HEAD BLUEBIRD TRAIL REPORT — 1974

by LORNE SCOTT*

After a long drawn-out winter with a record amount of snowfall, spring finally arrived in mid-April. The peak migration of Mountain Bluebirds was about 2 weeks later than usual and consequently nesting didn't begin until mid-May.

On May 18 a 5-day rain began and temperatures remained in the 40°F range. This prolonged wet and cold spell caused many of the female Mountain Bluebirds to abandon their nests in order to find enough food to stay alive.

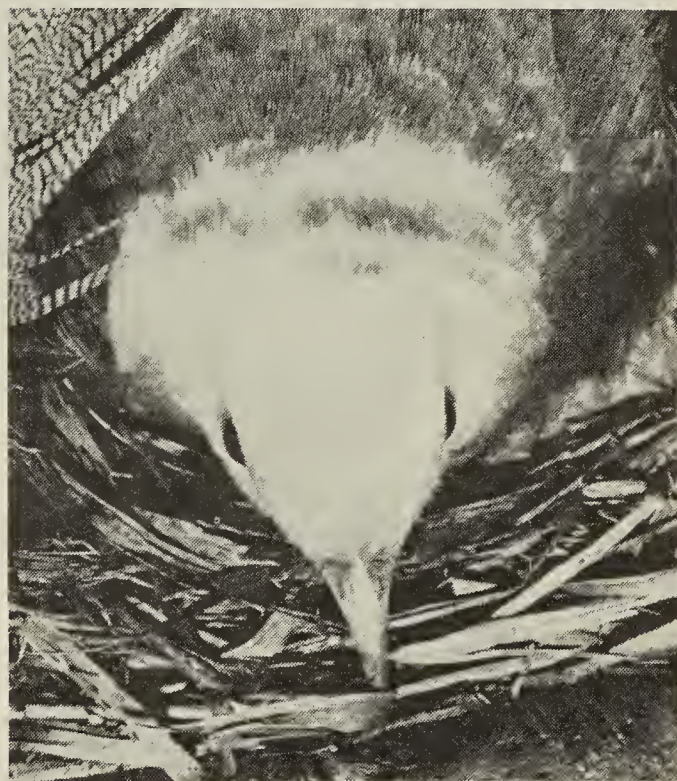
When the weather finally did clear and become warmer, the bluebirds returned to the nest boxes. Some of the females began incubating the cold eggs but in most cases only two or three hatched from the clutch of six. Many of the bluebirds simply built another nest over the cold wet eggs and laid a new clutch.

Despite the poor start early in the nesting season, a record number of Mountain Bluebirds was raised in the nest boxes. One hundred female bluebirds were captured and banded while incubating eggs. Another 30 females which were caught were already wearing bands from the previous 4 years. Two of these females had been banded as adults in 1970, which means they are at least 5 years old, a ripe old age for a wild bird of

this size. None of the bluebirds banded in 1969 were caught this year. A total of 800 young bluebirds were banded between May 28 and August 11.

Tree Swallows also had another successful nesting season. Some 200 females and 1,600 young were banded. However, the success of Tree Swallows would be nearly doubled if House Sparrows could be eliminated along the trail.

One of the highlights this year was having a partial albino female Mountain Bluebird nesting. Her beak was white instead of black and the feathers on her head and back of her neck were pure white rather than the normal blue-grey colour.



Lorne Scott

Partial albino female Mountain Bluebird at Indian Head, Saskatchewan. May 26, 1974.

Another first for this year was having a pair of Tree Swallows hatch and raise a Mountain Bluebird. Each year two or three bluebird nests are taken over by swallows while the bluebirds are laying eggs. The Tree Swallows lay their eggs in the nest containing one or more bluebird eggs. Usually the bluebird eggs hatch along with those of the swallows. However,

*Box 995,
Indian Head, Saskatchewan.
S0G 2K0.



Lorne Scott

White-headed female Mountain Bluebird, Indian Head, Saskatchewan. May 26, 1974.

the young bluebirds have always died in the nest until this year when one young bluebird was fledged along with five Tree Swallows.

Since 1963, 1,800 nest boxes have been set out along the Indian Head bluebird trail. A total of 4,000 bluebirds and 8,000 Tree Swallows have been banded since 1969. Several hundred more bluebirds and swallows that were not banded have been fledged from the houses.

I hope to set out another 200 houses next spring but due to the time and expense involved I do not expect to carry out an extensive banding program as I have done in the past.

SASKATOON BLUEBIRD TRAIL — 1974

by DONALD S. HOUSTON*

This year, our success with the bluebird house trail was again good. We relocated a number of boxes that had been used by House Sparrows, into proven bluebird territory, and added a few more (including seven contributed by Leo Smith of Toronto) to bring the total in our main study area to 233 houses. Of these, eight were damaged and empty and only seven were intact and unoccupied — for a 94% occupancy rate.

We had 54 nestboxes used by Moun-

*863 University Drive,
Saskatoon, Saskatchewan.
S7N 0J8.

tain Bluebirds, up from 35 last year (and compared to 3, 8, 12 and 25, respectively, in the first 4 years). In addition, we had our first female Eastern Bluebird, mated to a male Mountain Bluebird, producing five healthy hybrid young. Due to a late spring and heavy spring rains, many nests were deserted and the average brood size for bluebirds was only 4.73, yet we banded a record 183 young Mountain Bluebirds plus the five hybrids mentioned.

Our Tree Swallows did well this year with an average brood size of 5.44 when banded. With increasing numbers of bluebirds and House Wrens, the latter up from a previous maximum of two to eight this year, the number of boxes used by Tree Swallows was down to 132 this year. House Sparrows, fortunately, dropped from 52 to 45 boxes.

Twenty-one boxes were used by two or more species during the season. One pair of Tree Swallows successfully raised five young and simultaneously fledged a young bluebird from an egg left by a Mountain Bluebird that had occupied the box before the swallows took over. In total, the Saskatoon Junior Natural History Society is pleased with results for the past 6 years and we look forward to a further increase in bluebird occupancy in 1975.

**LANGHAM, SASKATCHEWAN
BLUEBIRD PROJECT — 1974**

by JACK KARGUT*

This spring instead of the usual 10 boxes to the mile, we erected 12 boxes in one half mile as an experiment. The results speak for themselves: four pairs of Mountain Bluebirds, eight pairs of Tree Swallows and one pair of House Wrens, including a pair of bluebirds that followed a swallow nesting — all in a half mile!

*Box 92,
Langham, Saskatchewan
S0K 2L0

Efforts to date:
Nesting boxes added — New 152
—Replacements 21
Total boxes erected (1971-1974) 452

Additional area covered 1974:
No. 5 Highway, Denholm to
Battleford completed.
Sandhills area extended to
Asquith grid-road.
Grid-road north to correction line
(approx. 6 miles).
Park Municipal Pasture (approx. 5
miles).
Upper approach to Borden bridge.
South and west along N. Saskat-
chewan River (approx. 5 miles).

1974 Results:	
Mountain Bluebird	93 pairs
	(440 eggs and young)
Tree Swallow	268 pairs
	(1459 eggs and young)
House Sparrow	27 pairs
House Wren	10 pairs
Flicker	2 pairs
Starling	1 pair
Vacant	31
Boxes unaccounted for	20

**WESTERN TANAGER
SIGHTING IN MANITOBA**

by CALVIN CUTHBERT*

On June 26, 1973, while participating in Breeding Bird Surveys in the Carberry Spruce Woods area of Manitoba I had the good fortune to observe a male Western Tanager.

At 6:30 a.m. I was about to complete the last grid line of a 20-acre plot located 20 miles southeast of Carberry. A series of hoarse warbling notes, however, coming from inside a nearby stand of mature white spruce caught my attention. The song was unfamiliar to me and, as I had not heard

*R.R. 1, Box 59,
Portage La Prairie, Manitoba.

it on previous morning visits to the plot, I decided to check it out. Upon my quiet approach to the spruce stand, the singing stopped and much to my surprise out flew a male Western Tanager. The bird flew a distance of about 60 yards and landed on the top of a white spruce. Upon focusing my 7x35 power binoculars on the bird, its identity was unmistakable. Its dominant yellow colouring with black tail and upper back and dark wings with light yellow wing bars was quite apparent. The red forehead on its otherwise yellow head clinched identification. The bird remained on the top of the tree for about 1 minute, sang briefly and then flew off. I did not see it again.

There have been several other recorded sightings of Western Tanagers in Manitoba. Records from the late A. J. Lawrence's columns of "Chickadee Notes" in the Winnipeg Free Press indicate that pairs of birds were seen at St. Vital, Brandon, and Starbuck in June, 1933, July, 1938, and early July, 1963, respectively. Locations of single sightings include Ponemah and Winnipeg. Godfrey (1966, *The Birds of Canada*) however, makes no mention of the status of this species in Manitoba.

SASKATCHEWAN CHRISTMAS BIRD COUNT 1974

List the number of each bird species seen on the one best day from Saturday, December 14, through Tuesday, December 31, 1974. If your chosen day is snowed or frozen out, you may take it New Year's Day. See the June, 1974 *Blue Jay* for examples and details. Send reports as soon as possible and by January 10, 1975, at the latest, to Mrs. Mary Houston, 863 University Drive, Saskatoon, Sask., S7N 0J8.

HELP A U.S. REFUGE FOR SANDHILL CRANES

THE FACTS: Shallow submerged sandbars with adjacent wet meadow and nearby croplands make the Great Bend area of the Platte River in central Nebraska a uniquely-ideal resting and feeding area for sandhill cranes. Each spring about 80% of the total mid-continental population of sandhill cranes (250,000 birds) converge on the area during their annual northward migration. The area also is used by Canada geese, pintail and mallard ducks and endangered bald eagles and whooping cranes. The U.S. Fish and Wildlife Service proposes to establish a national wildlife refuge in the area encompassing 11 miles of Platte River flood plain (15,000 acres) or one-fifth of the traditional sandhill crane habitat. **THE CRISIS:** The refuge is opposed by many local landowners, developers, and supporters of the still pending Mid-State Reclamation Project. Meanwhile, crane habitat is being lost. **WHAT YOU CAN DO:** Write Rogers C. B. Morton, Secretary of the Interior, Washington, D.C. 20240. Advise him of your interest in cranes and urge him to support the refuge, and abandon the Mid-State project or modify it to protect waterfowl. Send copies to Mme. Jeanne Sauvé, Minister, Environment Canada, Place Vincent Massey Bldg., Hull, Quebec, and to S.N.H.S., Box 1321, Regina, Saskatchewan, S4P 3B8 (Modified from *National Wildlife*).

PRAIRIE NEST RECORD SCHEME

Will anyone with nest records for 1974 or earlier please send them by January 3, 1975, to:

H. W. R. Copland,
Manitoba Museum of
Man and Nature,
190 Rupert Avenue,
Winnipeg, Manitoba,
R3B 0N2.

A summary will then be prepared for contributors and interested persons.



Gary W. Seib

Cob Mute Swan with young Canada Goose he has killed. Regina, Saskatchewan. May 8, 1973.

AGGRESSIVE MUTE SWAN KILLS GOSLING

by GARY W. SEIB*

While I was taking photographs in Regina's Wascana Waterfowl Park on May 8, 1973, I noticed an unusual demonstration of territoriality among waterfowl.

A pair of Canada Geese with seven 2- or 3-day-old young were resting on the shoreline when a car drove up and scared them into the water. Quickly, a male or cob Mute Swan charged at the family group, scattering the young. The excited adult geese offered no defence when the swan picked up a gosling in its bill, shook it and then held it under water. It escaped and the swan chased another which eluded him

by diving. Then the swan singled out a gosling swimming away from shore into deeper water. He repeatedly bit it, shook it and held it under water until it was drowned. All this took only 3 or 4 minutes.

The parent geese and their remaining young climbed onto the shore and the swan patrolled back and forth to prevent them from entering the water again.

The swans were nesting on an island in the lake, almost $\frac{1}{4}$ mile from where this incident occurred, but the cob seemed determined to keep a large area of water free of other birds; he drove off ducks and coots as well.

*2-2104 - 14th Avenue,
Regina, Saskatchewan.
S4P 0X6

SIXTEEN ALBERTA BAT RECORDS, 1971-1974

by EDGAR T. JONES*

During the course of bird banding operations in various parts of Alberta, some rather interesting bat records have come to light. Using the mist net technique, for which an endorsed permit is required, invariably a number of bats are caught but most of them chew their way out unless removed almost immediately after contact. The following are a few interesting records, 10 of which were banded by the writer, the bands being supplied by Hugh C. Smith of the Alberta Provincial Museum and Archives:

Hoary Bat: August 23, 1972. Single adult female apparently travelling with two young, both of which chewed their way out within 2 feet of the female. H. C. Smith banded this bat and the record was filmed and recorded by the writer. Caught at my regular banding station on the south side of Edmonton. Wingspread — 16"; length — 5-1/2"; weight — 33.2 grams.

August 3, 1974. Immature female caught and banded by the writer at the same banding station within 30 feet of 1972 catch. Wingspread — 16-1/2"; weight — 45.5 grams.

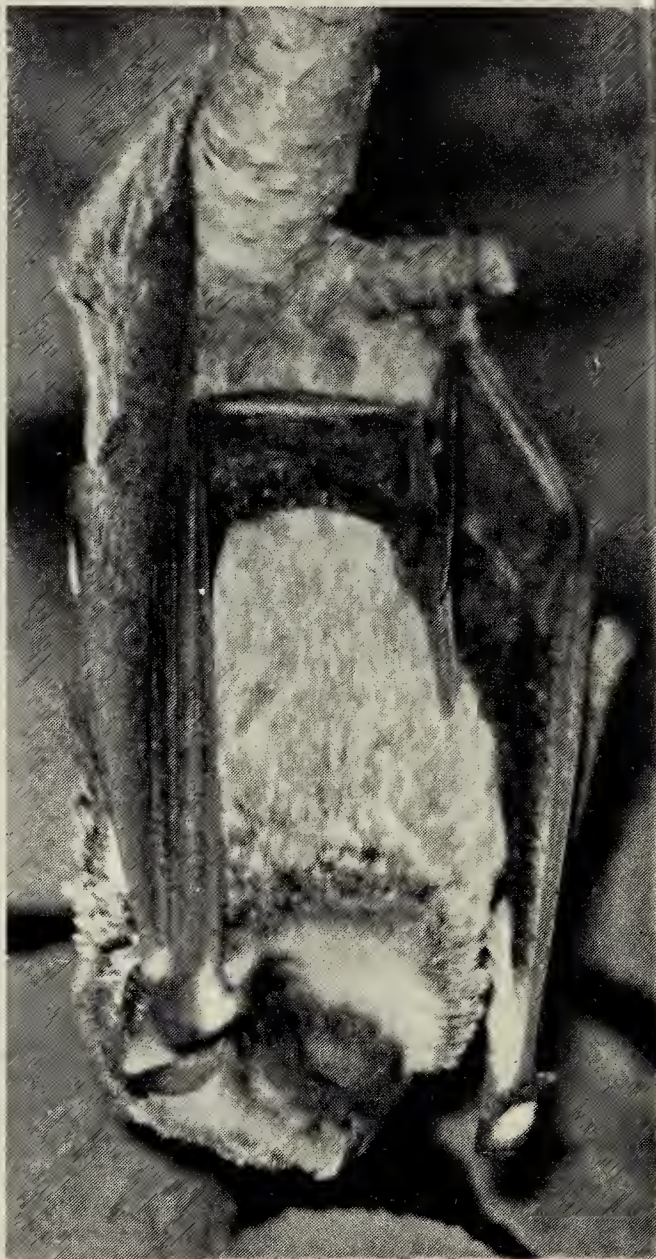
August 20, 1974. Adult caught and banded by writer in Red Deer Valley near Jenner.

Silver-Haired Bat: Sept. 5, 1971. Caught at Edmonton location.

August 21, 1972. Edmonton, banding location.

August 26, 1973. Red Deer Valley near Jenner.

*6115 - 141st Street,
Edmonton, Alberta.
T6H 4A6.



Edgar T. Jones

Hoary Bat hanging from branch

Big Brown Bat: August 20, 1974. Single adult caught and released near Jenner presumably on migration.

Say's Masked Bat: Individuals caught as follows:

May 18, 1973. Near Munson, on Red Deer Valley.

June 3, 1973. Near Jenner. Two caught and released.



Say's Masked Bat on tall trunk

Edgar T. Jones

June 6, 1973. Near Jenner. Single caught and released.

August 25, 1973. Near Jenner. Two caught, banded and released.

August 13, 1974. Jenner. Single caught, banded and released.

August 14, 1974. Jenner. Four caught, three banded.

August 15, 1974. Jenner. Two banded and released.

August 16, 1974. Jenner. Single banded and released.

August 20, 1974. Jenner. Two banded of three caught.

Mammals of Alberta by Dr. J. Dewey Soper, 1964, includes only three records of this bat in the Province. Since that time one or two other records have been reported by the Provincial Museum staff, not including those listed above. It appears that this bat is much more widely distributed in southeastern Alberta than previously indicated.

* * * * *

When the last individual of a race of living things breathes no more, another heaven and another earth must pass before such a one can be again.

William Beebe

THE INSTRUCTIVE STOMACHACHE*

Scientists are inducing stomachaches in coyotes to discourage sheep predation and thereby eliminate the pressure for use of highly lethal poisons which menace virtually every creature in the environment.

If the experiments currently taking place at the University of Utah can be translated into widespread practical application, destruction of livestock by predators could be controlled without resort to large-scale wildlife extermination programs.

Moreover, there is the exciting prospect that those endangered species whose members are dwindling because of diminishing food supplies might be conditioned by man to shift to more abundant food sources.

Prof. Carl R. Gustavson has been conducting the basic experiments with coyotes by feeding seven of them meat containing lithium chloride, a chemical agent which causes temporary nausea and vomiting. After the animals consumed the lamb laced with lithium chloride, they refused to attack sheep. The lithium chloride is a type of salt which neither appears to linger and accumulate in an animal's system nor causes death to any creature which might ingest it.

Gustavson admits his work is in the preliminary state. He needs to acquire more data, ascertain exactly how long the conditioned aversion will last, determine whether the mother coyote passes on her aversion to her pups and learn if animals can be taught to eat as well as reject particular foods.

Out in the field, he must demonstrate that he can get all the sheep-

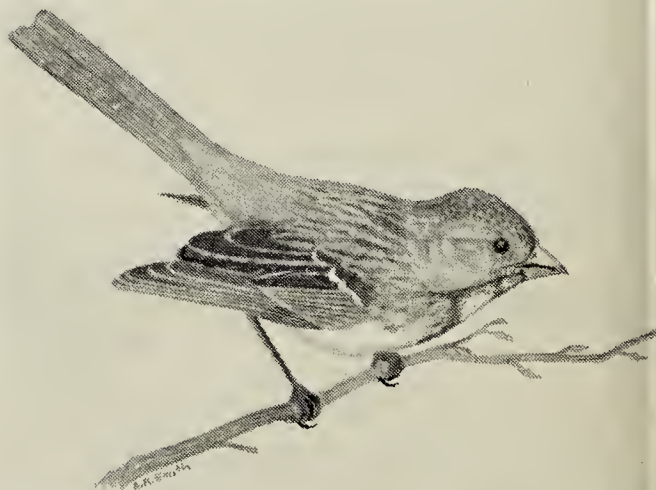
killing coyotes in an area to take the bait; find out what other animals will seize the bait, and determine what the impact will be on the ecosystem if coyotes' diets become less diversified.

Gustavson figures he needs at least a year, maybe two, to achieve his objectives, and he is seeking federal, state and private funds to continue his work.

The U.S. Interior Department is proceeding with the development of odor repellents and electrical fences.

As the habitat for wildlife shrinks before man's encroachment, predators are finding it harder to locate food. Their ultimate survival obviously depends upon preservation of as much of their remaining habitat as possible. Unfortunately, man's population growth dictates a situation which should get worse before it gets better.

Recognizing this, Gustavson points out that canines, big cats and other reputed flesh-eaters have been found to supplement their diet with insects and vegetation. This doesn't mean that one day we shall have coyotes grazing peacefully in the midst of a sheep herd. But perhaps some pleasurable conditioning can broaden the nutritional reliance of predators on the plant world when their prey is either hard to come by or is cherished by man.



Harris's Sparrow

A. R. Smith

*From *Conservation News*, Aug. 15, 1974.

30 Years Ago

Some excerpts from the mimeographed Oct.-Nov.-Dec., 1944 *Blue Jay*:

"As soon as gasoline becomes more plentiful, people will be flocking to the most remote corners of the dominion and, unless it can be impressed on the great mass of the public that they, and they alone, are responsible for preserving the beauty of the out of doors, the outlook is indeed a sorry one." Isabel Priestly.

The annual meeting of the Yorkton Natural History Society passed a vote of appreciation to Mrs. Priestly and Stuart Houston for their untiring efforts in the Production of the "Blue Jay".

"A conservation project which might be an example to Saskatchewan people was undertaken by an Ontario farm woman. Due to overpicking, the trilliums, those aristocrats of the woods, seemed in danger of practically dying out. So this purposeful woman decided to do something about it. She made a flower sanctuary of their woodlot and now, after her program of conservation has had a chance to show results, the woodlot is a showplace in springtime — a place of beauty and delight where visitors are welcome to look but not to pick."

"Eastern Bluebirds, the darker bluebirds with the chestnut breast, are less familiar in Saskatchewan than Mountain Bluebirds, so it was interesting to hear of two nesting records this year. One came from the farm of John Hubbard, Jr., Grenfell. Towards the end of June a pair of these birds were noticed investigating a granary in the yard, so Mr. Hubbard promptly fixed a cardboard box on the inside wall over a hole made by woodpeckers the previous winter. In the cardboard box the bluebirds raised their family . . . The other nest, also a late one, was reported by Mrs. Marion Nixon, Wauchope, in her nature column in the Saskatchewan Farmer. This nest was placed about a foot down in a hollow

post and was open to the sky which is unusual."

"Mrs. J. Meekma, Yorkton, had an unusual problem on her hands this summer. A neighbor's bees acquired the habit of congregating during the hot weather on the sides of her bird bath, even completely covering the stones in the middle as well. Her regular visitors — orioles, yellow warblers and so on — scolded long and loud so that she was obliged to place other shallow pans of water on the grass for them."

"A black 'gopher' (Richardson's Ground Squirrel) was caught by Frank Baines, Saltcoats, the end of July and forwarded to the Provincial Museum. The back of the animal was a rich glossy black and the rest of the body was darkly grizzled."

"A. O. Ascim, Love, . . . is of the opinion that an enthusiastic butterfly collector has every thrill in making his catches that the fisherman or hunter enjoys and at a cost small in comparison with other hobbies!"

"M. G. Street, Nipawin, who sent in a detailed report of his records this year, states: 'Mourning Doves this year have probably increased more in the Nipawin district than any other species with the exception of the Barn Swallow. They were quite rare less than ten years ago but now can be heard calling everywhere in spring and early summer.'"

MEMBERSHIP SUBSCRIPTION RENEWAL

In this issue of the *Blue Jay* you will have noticed a renewal form for your use for the coming year. Every year we spend a considerable amount of your money on postage and stationery in an effort to induce people to renew their memberships. If you will remove and complete this renewal form and mail to me NOW our expenses will

be reduced when it becomes necessary to invoice delinquent members next January and February.

Thank you,
George Dodd,
Treasurer.

TO THE ARCTIC BY CANOE 1819 - 1821

Stuart Houston has edited a 150-year-old manuscript of an important exploration across the northern Prairie Provinces and Northwest Territories. It has just been published under the title of "*To the Arctic by canoe, 1819-1821. The journal and paintings of Robert Hood, midshipman with Franklin.*" The story of this expedition from Hudson Bay to Bathurst Inlet by way of the Hayes, Saskatchewan, Churchill, Slave, Yellowknife and Coppermine rivers occupies 150 pages. Stuart has added 65 pages of explanatory text. There are 16 coloured and 10 black-and-white plates and 5 maps — each a full page in size. The format is large — 7-1/2" x 11" — and it is a handsome book for \$17.50. Now that you have decided to buy one for yourself or as a Christmas gift, please purchase your copy — autographed — through the *Blue Jay* Bookshop, Box 1121, Regina, Saskatchewan, S4P 3B4. In addition to several dollars profit that a store would otherwise get, SNHS also receives Stuart's royalties on all copies they sell.

1974 CLIFF SHAW AWARD

The Cliff Shaw Award for the best article in the last four issues of the *Blue Jay* is being given jointly to two people in 1974: William Niven and Robert Page.

William Niven has been a keen observer of birds around Sheho, Saskatchewan, since about 1920. In his article "The land, the birds through 50 years in aspen parkland", he gives us a rare and valuable account of changes in bird populations associated with agricultural development. To find that some species have arrived to enrich Saskatchewan's fauna during that

period is a pleasant surprise in view of the threat to other species in more recent years.

Robert Page of Winnipeg has maintained a generally thankless crusade for the cause of predators for several years. Unlike many people, whose concern for animals is too often exceeded by their lethargy, Mr. Page has used his pen extensively, at considerable expense to himself in time and money, to try to effect change. His article, "Do predators have rights" brought letters of protest to the Saskatchewan Government from both Canada and the United States.

We are grateful to these two men and hope that their efforts will prompt other members of the Society to commit their stories to writing for the benefit of all of us.

1974 CONSERVATION AWARD

The 1974 Conservation Award of SNHS was awarded to the Saskatoon Resources Study Group at the Annual Meeting. In presenting the award, Dr. Stuart Houston cited the Group's report on the Saskatchewan forest industry and their publication of a tabloid on the grassland park. The report on the Prince Albert pulp mill had a part in changing the design of the mill, thus reducing pollution of the North Saskatchewan River. The Group was formed in 1970 and all the officers have been University of Saskatchewan students from a number of colleges.



Marie Jaseniuk receiving Conservation Award from Stuart Houston.

Letters

REGINA EARTHQUAKE

After reading about the earthquake shock by W. O. Kupsch in the June *Blue Jay*, I asked my dad if he could remember where he was on Saturday evening, May 15, 1909.

After about a minute he said he had been putting up a sod house on his homestead and was walking to a neighbour's place (with whom the family was staying) and on arrival there, his wife told him that a few minutes before the dishes were jumping around on the shelf.

His homestead is 5 miles south of Woodrow, Saskatchewan, or 110 miles southwest of Regina. His age is 93, and he is and always has been interested in birds and insects. — *C. H. Shulver*, Lafleche, Saskatchewan.

ODD ACRES

We just received our September issue of *Blue Jay*. A letter from a member in Bangor, Saskatchewan really raised my ire. On page 189 she writes about leaving road allowances idle for wildlife. All well and good. I agree with her to a degree that we do need odd acres for wildlife but the sentence that hit below the belt was, "Now that grain is a better price, I can see many farmers eyeing the natural little parks and seeing them as a means of a few cheap acres."

Now I ask you, since when has a farmer been considered cheap? I don't have to use reams of paper and space to extol the platitudes of the farmer — I could go ahead and list a multitude of reasons to defend the poor-always-down-trodden farmer who gets the blame for far too many things.

We farm southeast of Saskatoon and all told we have well over 60 acres of

brush, slough, bluffs and odd acres which we have left for wildlife. We enjoy all the birds and other wildlife which make use of these bits and pieces of sanctuary. We even raise pheasants and turn them out for the foxes to enjoy!

To elaborate a little further. Odd acres is a new term being introduced. These spots or areas are on farms, ranches or acreages. They are places such as fence corners, rocky spots, blow-outs, sinkholes, abandoned roads, sloughs and good land isolated by ditches, streams or gullies. They can be fenced to protect them from grazing animals or from fire by plowing or discing fireguards. Sometimes these odd acres are planted with trees, shrubs and other cover to provide wildlife with food and cover.

Although these odd acres are small, they occur on many farms and ranches and total about 10 million acres over the whole country.

As many will realize, those tree-islands scattered throughout a farmer's field belong to the conservation-minded. If they are bull-dozed out, as many have been already, there won't be a place left for a duck, pheasant or partridge to hide in. Authorities state that a bluff of trees, 30 feet high, can protect soil a mile in circumference around it, from erosion.

This is where we all can help to spread the word by encouraging those that can leave their odd areas for conservation pieces. But it must be promoted and not by calling farmers cheap because someone thinks they may need that extra bit of land. Road allowances should be used if it helps prevent grasshoppers and cutworms from hatching and for control of weeds, such as wild oats which soon take over a food crop.

There is much to be considered before one can take a stand on a project such as your correspondent suggests. For as our population increases, *planned* production of wildlife will become more and more impor-

tant. Wildlife is a crop of the land and only farmers and ranchers can make effective decisions regarding wildlife production and conservation on their land.

We are all conservationists in our field but no matter how strongly we feel on the subject, we must have consideration for those people who have to live with it. — *Mrs. Theresa M. Heuchert*, Box 21, Clavet, Saskatchewan, S0K 0Y0.

BRANT AT CARROT RIVER

On October 10, 1974, I was in a field watching flocks of geese coming from the Carrot River to feed. Canada Geese were flying quite high and going about 3 miles further south.

About eight black ones separated from the rest and came right over us, very low. They were certainly not Canadas. Godfrey's "Birds of Canada" pictures were right and they were Brant: black with just a suggestion of a chin strap, they flew in a very limber manner, as the wing tips bend up. They are much smaller than geese.

This was on NE1-51-9-W2nd at 6 p.m. They went about a mile east of us to feed; no geese went with them. — *F. B. Armstrong*, Carrot River, Saskatchewan.

THE PRAIRIE FALCON AND I IN 1973

September 25/73 — As I stepped out, I noticed a Prairie Falcon chasing pigeons around our grain mixer. Around and around they went as I stood watching (rug in hand forgetting that I went out to shake the rug). After many rounds, the pigeons headed for the barn and I lost sight of the chase.

October 18/73 — I noticed a Prairie

Falcon swiftly flying past the feed stacks and then coming back as though looking for something. My curiosity got the best of me, so I went to investigate. I found a house sparrow nipped in two. The two parts, (feet, tail and head, wings) were about 3 yards apart.

October 20/73 — When my husband was doing evening chores a Prairie Falcon refused to leave the area near the feed stacks and two magpies were right there scolding it. I went to see what was going on and found one of my young chickens was the victim. (No hard feelings about the chicken on my part).

October 26/73 — As I got close to the hen house, I stopped in my tracks. There at the corner of the hen house was a Prairie Falcon with a freshly killed white hen. I went back to the house for my books and binoculars; standing within feet of the falcon I studied every mark and line the poor thing had. (The books don't show it exactly like it is.) I didn't need the binoculars because I could almost touch it before it would fly.

I walked very slowly towards it until I was about 3 steps from it. It looked at me with "big round eyes" but did not move. Thinking it could not fly, I decided to pick it up, but as I got to it, it flew to some straw bales that were near by. From there it flew and perched on a granary. I took the hen and on the bales I placed a piece of the rabbit that my husband had brought home for our cats. I went into the garage and watched. It wasn't long before the falcon went back to the bales and at once started eating the rabbit meat. I was so thrilled I went to tell my husband, Nick, about it; he brought the camera along and took some pictures.

I spent at least 2 hours watching the falcon. Nick could not get as close to it as I could, maybe because of the clothes (I had browns, he had blues) or because I walked slowly towards it, while Nick walked too fast.

For the next two days I was going to be away from home, but I left strict or-

ders with my husband, that if the falcon came back, he was to feed it some rabbit. Well, Saturday evening the 27th, when Nick looked out, not one but two falcons were perched on the bales. He went out and put a piece of rabbit on the bales and watched but before the falcons came back the cats ate the meat, so he put out more rabbit and again the cats ate it; he gave up, too soon.

The next day, Nick saw a falcon

chasing a Great Horned Owl out of our garden trees.

To this day I am sorry I had to be away and miss out on the thrill of watching the two falcons.

I hope the falcons come to our yard for their "chicken dinners" and not to some yard where a gun would get after them. — *Flossie Bogden*, Box 92, Spring Valley, Saskatchewan, S0H 3X0.



WINTER SEARCH PARTY

A Guide to insects and other invertebrates

By Helen Ross Russell

Published by J. Thomas Nelson & Sons,
Don Mills, Ontario
171 pp. 1971. \$4.95

This book will interest everyone from young child to armchair naturalist. Descriptions of common insects, wonderfully simple line drawings and information on life cycles, behaviour (some of which is truly amazing) and environment, are not only interesting but give a wealth of knowledge to those of us who have not made a study of these creatures. I believe the book was written primarily for young people but the main thought in the author's mind is to make all of us conscious of the fact that our natural history studies, whatever our specialties may be need not cease because of winter weather when most of our birds have migrated to warmer

areas and trees and plants are at rest.

A strong point made by Helen Russell is that one can find insects and invertebrates in one stage or another, without making great treks through the countryside. They are in our houses, garages, sheds, on plants, trees and even in frozen ponds — in fact, most nooks and crannies will produce some form of life for us to study. The book tells us what to look for and where to look, however minute the animal may be.

Equipment necessary for winter study of insects is so simple that most of it can be found right in our own homes.

The author is keen to impress on us all that there is a very important interrelationship between all living things, great and small, and while she condones a certain amount of collecting for study purposes, she is opposed to wanton destruction of any animal — even so-called pests, (although she admits some things need to be controlled to some extent).

Read this book and find out how much you know about insects and other invertebrates. There is a good chance your interest may be stimulated to the point that you will be moved to do some searching of your own, throughout the winter months — or better yet, make it a family affair! — *Pat O'Neil*, 1125 Elliot Street, Saskatoon, Saskatchewan.

ANIMALS AND PLANTS IN WINTER

by DIANE SARICH*

During the cold days of winter all life must yield to the demanding laws of nature. Most species of birds migrate to warmer climates, some animals hibernate for the winter while others remain more active. The Saskatoon Public Library has several books containing information on what animals do when the cold weather comes:

BARNETT, Samuel A. *Instinct and intelligence*. 1967. 224 p. This book has material on the migration habits of animals and how they protect themselves against temperature changes.

Y 591.5 B261.

BURTON, Maurice. *The sixth sense of animals*. 1973. 182 p. Chapter 8 is "Heat and Cold".

591.182 B974

DROSCHER, Vitus B. *The magic of the senses*. 1969. 298 p. Chapter 2 — "The Temperature Sense"; Chapter 8 — "Migration".

Y 591.18 D787.

KAVALER, Lucy. *Life battles cold*. 1973. 160 p. The incredible ways in which living things have adapted to the cold. Chapter 8 — "Winter in the den"; Chapter 7 — "The secrets of migration".

Y 574.542 K21

RUSSELL, Helen R. *Winter search party; a guide to insects and other invertebrates*. 1971. 171 p. How to look for, recognize, collect, house and observe insects and other small animals in winter.

595.7 R963.

The following books relate the experiences some people have had with animals during winter:

*Saskatoon Public Library,
23rd St. and 4th Ave.,
Saskatoon, Saskatchewan.

ERRINGTON, Paul L. *The red gods call*. 1973. 171 p. We follow the author along game trails from the Big Sioux River in South Dakota to the Big Bog Country in Minnesota to the Canadian North. Chapter 5 — "Winter camps"; Chapter 10 — "Winter in the Big Bay"; Chapter 13 — "Winter at Tetonkaka".

500.9783 E72

HOOVER, Helen. *The years of the forest*. 1973. 318 p. The author and her husband spent 16 years in a remote cabin in the Minnesota woods and developed close communications with wildlife, especially the animals they helped through starving winters.

500.9776 H789.

KNAUTH, Percy. *The north woods*. 1972. 184 p. The forest wildlife from Manitoba and Saskatchewan to Lake Athabasca. There are two chapters on winter: "In the grip of winter" and "The bane and blessing of snow".

500.971 K67.

OGBURN, Charlton. *The winter beach*. 1966. 321 p. The author followed winter southward from eastern Maine to the North Carolina Banks observing the changes in animals and vegetation.

500.909146 034.

RUSSELL, Franklin. *Searchers at the gulf*. 1970. 222 p. A season by season account of how the elements affect the creatures of the gulf of a typical river over the period of a year.

591.5 R963.

STEELE, Mary Q. *The living year*. 1972. 109 p. A rural Tennessee housewife observes the wildlife around her in the garden, fields and woods from spring to spring.

500.9768 S814

TEALE, Edwin M. *Wandering through winter*. 1965. 370 p. A naturalist's record of a 20,000-mile journey through the North American winter.

574.973 T253W

The following are two books which have good sections on hibernation:

HANCOCKS, David. *Master builders of the animal world*. 1973. 144 p. Some animals escape the cold by excavating deep within the snow and this book describes the different structures that the animals built for their protection.

591.56 H235.

KAVALER, Lucy. *Freezing point; cold as a matter of life and death*. 1970. 416 p. How living things adapt to extreme cold, with special attention to the greatest of all animal adaptations — hibernation. Chapter 4 — "Animal adaptations"; Chapter 5 — "Migration, hibernation, or mass death"; Chapter 6 — "Growth in cold soil".

574.1916 K21.

There are different types of hibernation. "True" hibernation takes place only in warm-blooded animals such as some bats and ground squirrels. For information on these mammals you could consult the following books in the library:

HENISCH, Bridget Ann. *Chipmunk portrait*. 1970. 97 p.

Y 599.3232 H511

LAUBER, Patricia. *Bats, wings in the night*. 1968. 76 p. The feeding, breeding and living habits of the many varieties of bats.

Y599.4 L366

MacCLINTOCK, Dorias. *Squirrels of North America*. 1970. 184 p. Ground squirrels: p. 33-57; Woodchucks and marmots: p. 5-20; Chipmunks: p. 83-103.

599.3232 M127.

SCHOONMAKER, Walter J. *The world of the woodchuck*. 1966. 146 p.

599.3232 S372

Bears sleep through the winter but are not considered "true" hibernators because their body temperature doesn't drop much below normal. There are two books in the Saskatoon Public Library which have good sections on how bears hibernate.

RUSSELL, Andy. *Grizzly country*. 1967. 302 p. Chapter 2 contains the natural history of the bear, his habitat, range and habits.

599.74446 R961.

VAN WORMER, Joe. *The world of the black bear*. 1966. 163 p. The author follows the bear through a full year. Chapter 5 is on winter.

Y599.74446 V285.

Many cold-blooded animals hibernate, such as frogs, lizards, snakes, toads and turtles:

CARR, Archie F. *So excellent a fish; a natural history of sea turtles*. 1967. 248 p.

598.13 C311.

FROOM, Barbara. *The snakes of Canada*. 1972. 128 p. (Another copy in Reference).

598.120971 F 936

PORTER, George. *The world of the frog and the toad*. 1967. 153 p. Chapter 5 is on winter and hibernation.

597.8 P845

SMITH, Hobart M. *Handbook of lizards; lizards of the United States and of Canada*. 1967, c 1946. 557 p. The life history of lizards begins on page 31.

598.112 S649.

WHITE, William. *A frog is born*. 1972. 80 p.

Y597.8 W589

WRIGHT, Albert H. *Handbook of frogs and toads of the United States and Canada*. 1967 C1949. 640 p.

597.8 W947.

Food supplies become scarce in the winter and many animals migrate to warmer climates where there is a more plentiful food supply. Here are four general books which cover this subject:

FRISCH, Otto Von. *Animal migration*. 1969. 125 p. The research that has gone into man's attempt to answer the how and why of animal movement and migration.

591.52 F917

JARMAN, Catherine. *Atlas of animal migration*. 1972. 124 p. The migration of birds, mammals, fish, reptiles, amphibians and insects with relief maps and globes of migration routes. (Another copy in Reference.)

591.52 J37.

ORR, Robert T. *Animals in migration*. 1970. 303 p. The types of population movements, the reasons for migration and the environmental influences on migration.

591.52 075

RICARD, Matthew. *The mystery of animal migration*. 1968. 209 p. The migratory patterns of many animals, with birds in the greatest detail. (Another copy in Reference).

591.52 R487.

Every winter most birds fly to a warmer climate. There are several books in the library which cover this subject:

BARRUEL, Paul. *Birds of the world; their life and habits*. 1973. 222 p. Chapter 3 is on migration. (Another copy in Reference.)

Y598.2 B278.

BRUUN, Bertel. *The Dell encyclopedia of birds*. 1974. 240 p. Bird behavior and migration patterns, nesting and feeding habits.

598.203 B913.

DORST, Jean. *The migrations of birds*. 1962. 476 p. The principal methods of studying the seasonal migration of birds.

598.252 D718.

GRIFFIN, Donald R. *Bird migration*. 1964. 180 p.

Y598.252 G851.

KAUFMANN, John. *Wings, sun and stars; the story of bird migration*. 1969. 159 p.

Y598.252 K21.

McELROY, Thomas P. *The habitat guide to birding*. 1974. 257 p. Chapter 14 is "Watching songbirds in winter". (Another copy in Reference.)

598.2073 M141

MAY, Charles P. *A book of Canadian birds*. 1967. 115 p. Description of 28 common birds found in Canada with information about their habits and habitat.

Y598.2971 M466.

One method of gathering information about animals during the winter is by observing their tracks. Two helpful books on this subject are:

MURIE, Olaus Johan. *A field guide to animal tracks*. 1954. 374 p. This book includes all the mammals of North America as well as many birds and insects. (Another copy in Reference.)

591.5 M977

WEBSTER, David. *Track watching*. 1972. 89 p. How to become an amateur track watcher.

Y591.5 W378.

Winter is not a season of reproduction and all plant life lies dormant. The following books about plants discuss how they survive the winter:

KAVALER, Lucy. *Life battles cold*. 1973. 160 p. Chapter 10 — "When microbes rest"; Chapter 11 — "Do not walk on the masses"; Chapter 12 — "Plants meet the test"; Chapter 13 — "The seeds survive".

Y574.542 K21

NORTHEN, Henry T. *Ingenious kingdom the remarkable world of plants*. 1970. 274 p. Chapter 12 — "Calendars and clocks"; Chapter 13 — "Adaptations to environment".

581 N874

——— *The world of plants*. 1965. 160 p. Part Five — "The climates and seasons". A discussion of the effects of cold begins on page 102.

Fish seem to have made the most successful adaptation to cold. Lucy Kavalier discusses fish in Chapter 5 of her book *Life battles cold*. Two other books which would be helpful are:

COOPER, Allan. *Fishes of the world*. 1971. 159 p. Chapter 14 — "Adaptations in fresh water"; Chapter 17 — "Adaptations in the sea"; Chapter 24 — "Migrations".

597 C776.

LAGLER, Karl F. *Ichthyology*. 1962. 545 p. A discussion of temperature begins on page 433.

597 L175

Most insects lie dormant in the soil beneath the snow. Many butterflies and moths hibernate in a cocoon stage. The following books deal with insects:

CALLAHAN, Philip S. *Insect behavior*. 1970. 155 p. The ways in which insects have managed to adapt to their environments. Chapter 7 — "Of home and the weather".

Y595.7 C156.

HOOPER, Ronald R. *The Butterflies of Saskatchewan*. 1973. 216 p. The habits, life histories, and identification of Saskatchewan butterflies. (Another copy in Reference.)

595.789 H787.

HUTCHINS, Ross E. *Insects*. 1966. 324 p. Chapter 5 — "Insect migration"; Chapter 2 — "Instinct, intelligence and behavior".

595.7 H974.

TWEEDIE, Michael. *Insects*. 1973. 72 p. 101 colour photographs and accounts of each insect's habits and life history. 595.7 T971i.

URQUHART, Frederick A. *The Monarch butterfly*. 1960. 361 p. Chapter 3 covers the subject of migration. 595.789 U79.

Some animals live in a winter atmosphere all year long:

LONG, Tony. *Mountain animals*. 1971. 152 p. How animals from migrating lemmings and snow finches to giant pandas survive in this remote area above the tree-line. Y591.90943 L849.

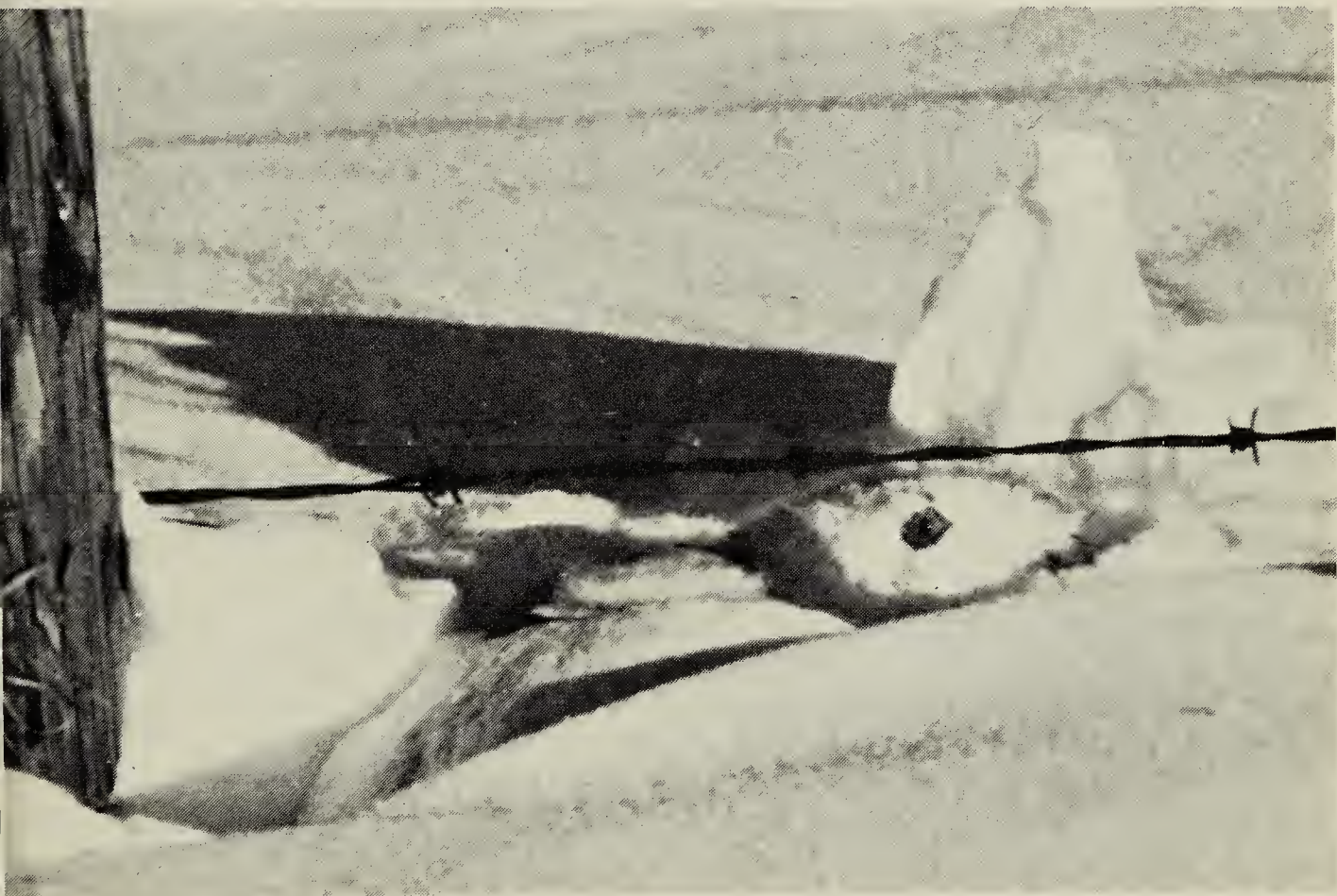
PERRY, Richard. *The polar worlds*. 1973. 316 p. The life histories and interrelationships of native species of the Arctic and Antarctic regions. 591.998 P464.

STONEHOUSE, Bernard. *Animals of the Antarctic*. 1972. 171 p. The land animals of this region and their curious adaptations for surviving on the world's coldest continent. Y591.998 S881.

SUTTON, George M. *High Arctic*. 1971. 116 p. The birds and mammals of Bathurst Island. 500.97122 S967.

The Children's Department of the Saskatoon Public Library has a text for young naturalists who are curious about the winter habits of North American wildlife. It is called *Where they go in winter*, by Margaret Waieny BUCK. 1968. 72 p. J591.5 B922w.

There is a good book on this subject which isn't available at the Saskatoon Public Library. It is now out of print but might be available in other libraries or on interlibrary loan. It is called *Field book of animals in winter* by Ann H. MORGAN. It was published in 1939 and has 527 pages. It is an introduction to the ways in which animals meet the crises and depressions of winter. Chapter 3 is on seasonal migrations and Chapter 4 is about hibernation.



Snowshoe Hare

R. E. Gehlert

LOOKING BACK

Another volume of *Blue Jay* has been published — much to the amazement of the well disorganized editor. I continue to be impressed at what goes into four issues. To fill about 200 pages of type and some 60 pages of illustrations required 400 pages of double-spaced typing and writing and more than 110 photographs and 25 maps. This material came from nearly 100 writers of articles, notes, reviews and letters and from more than 35 photographers. A crew of three volunteers — Robert Nero, Vern Harms and the editor — has reviewed all of it. Five others took the time to proofread galleys and help in typing: Ed Driver, Molly Denson, Bill Richards, Thelma Pepper and Jean Meston. Gary Seib once again rounded up appropriate photos, cut and pasted the 11"-long printed columns and marked the illustrations to fit into 256 *Blue Jay* pages. Lorne Scott and his crew looked after the mailing of more than 10,000 copies. On behalf of the membership, I thank the authors, photographers and editorial staff for their time, energy, cooperation and patience.

I apologize to those writers who have been upset by some of my changes in their material or delays in its appearance. I have not been able to get modified manuscripts and galleys back to them for approval and proofreading. I would like to claim the reason was deadlines but more often it has been lethargy. In some cases through misunderstanding and in others through carelessness — both on my part — mistakes have been made. Probably my first New Year's resolution is long overdue: I will send galleys of at least articles to authors for proofreading in 1975.

In conclusion, I would urge many more of you to write — about any phase of nature that you have information on. Particularly, we want your observations and opinions on plants, mammals, insects and other invertebrates, reptiles, amphibians, fish, conservation, environmental problems, geology, paleontology and astronomy.

We can also use more photographs — coloured or black-and-white prints (any size but no smaller than 2" x 2"), slides or negatives of any size. We don't need stories with them, although these would be welcomed. Just send sharp, clear shots with your name, the subject and location or title of the picture and, if you have it, the date it was taken. We can return them to you, if you wish, after we are finished with them. We would like to put more pictures in the 1975 *Blue Jay* but can't do it without your help.

Have a happy Christmas season — writing stories for the next *Blue Jay*! — Bernie Gollop.

* * * * *

A BIRD PROPHECY. In olden times it was a common superstition in northern Europe that the appearance of the "Silky-tail" foreboded war, pestilence, famine, or some dire natural catastrophe. The bird, a larger relative of our familiar Cedar Waxwing, came later to be known as the Bohemian Waxwing but whether in allusion to its wandering habits or to its occurrence in Bohemia is not known.

From *Nature Magazine*, April, 1924.

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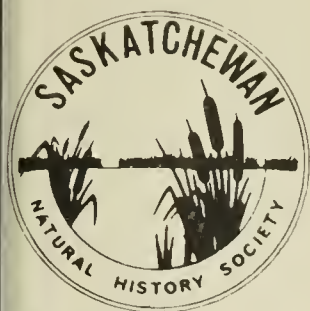
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